

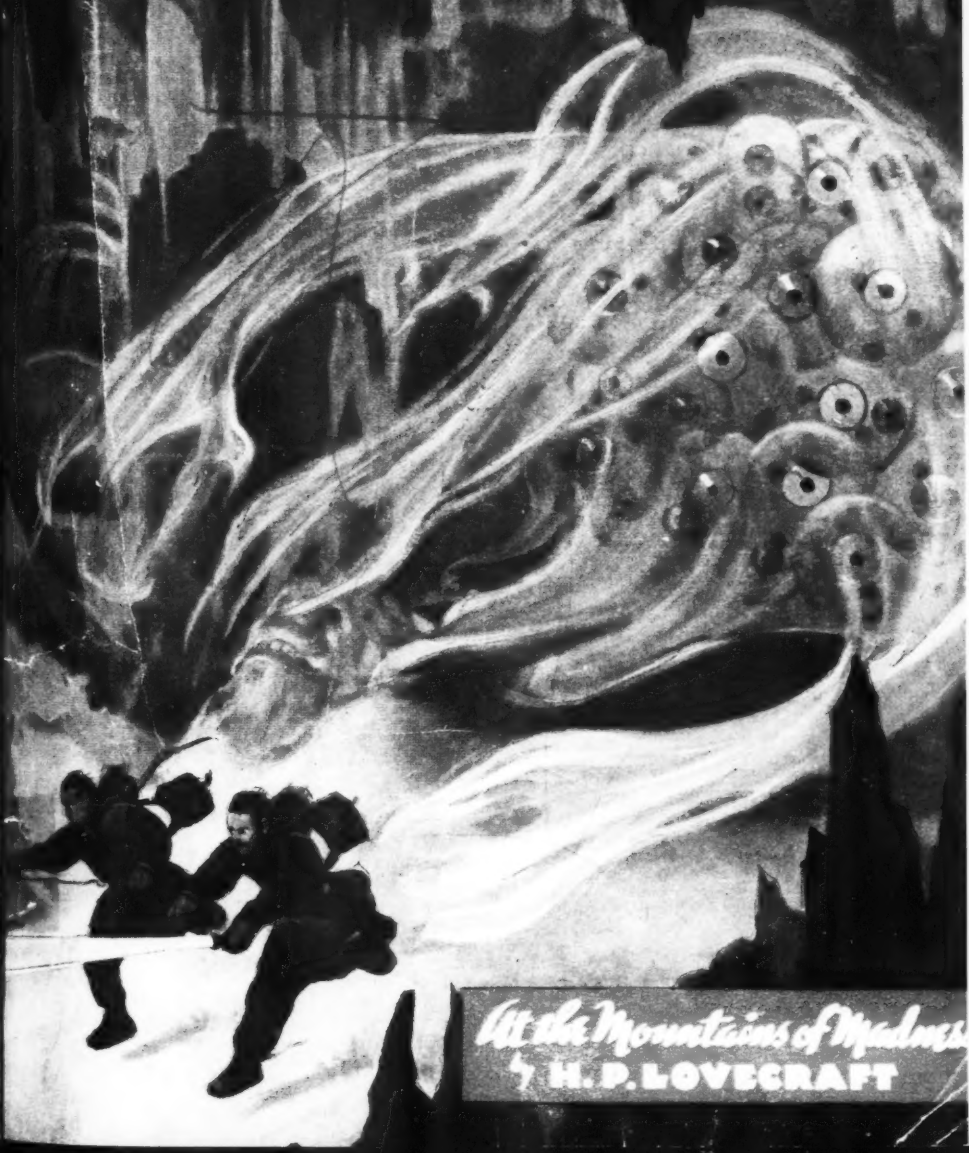
CONTENTS COPYRIGHTED 1936

FEBRUARY 1936

ASTOUNDING

STORIES

20¢



At the Mountains of Madness
by H. P. LOVECRAFT

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NEW INVENTION

3 TO 7 MILES MORE PER GALLON
MOTORIST SAVES \$180.00 a YEAR



Saves up to Thirty Per Cent On Gas.
 Provides Faster Pick-Up—More Power—
 Greater Mileage and Smoother Running.
GET FREE INFORMATION

VACU-MATIC

the Carburetor Control that "BREATHES"

LAST! Automotive engineers have smashed down the barriers of perfected combustion! The new VACU-MATIC solves the secret of greater power! With almost magical action, this amazing invention instantly puts new life and pep in any motor. It adds mileage to every gallon of gasoline . . . produces split-second pick-up, sensitive accelerator response, greater speed and smoother running.

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The self-starter—four wheel brakes—knee action—streamlining . . . and now VACU-MATIC! The greatest motor improvement of recent years! With it, engineers have achieved a practical means of balancing air and gasoline automatically for all speeds. VACU-MATIC is *entirely different!* It is AUTOMATIC and allows the motor to "breathe" at the correct time, opening and closing automatically as required. No idling troubles—no carburetor adjustments necessary. Just put it on and forget it! Sharply cuts fuel costs, saves dollars in gas costs, reduces carbon and gives your engine new pep, greater power and longer life.

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Name _____
 Address _____
 City _____ State _____
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Have tried the Vacu-matic and it sure is fine. Better pick-up with a 30% gas saving.—John C. Martin, Pa.

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I am amazed at Vacu-matic performance. It's giving me 5 more miles per gallon. Walter Zielinski, Ill.

FRANKLIN

With Vacu-matic I have increased my mileage from 10.1 to 14.2 miles per gallon. I figure I save over \$75.00 a year in gasoline. R. K. Radtke, Wis.

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NASH

On my Advanced 6 Nash gained 17 1/2% in mileage. The car will idle down to 3 miles an hour and then take gas without a complaint.—J. Showalter, Mo

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Just completed 2310 miles on 92 gallons in my 1933 Dodge 6. This figures 25 miles while before I averaged only 20 miles per gal. on trips.—Al Fruzyna, Calif

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Everything I claim about Vacu-matic is true. I now get 20 miles to the gallon. Before I was averaging 15 1/2 miles.—C. Constantino, Fla.

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On Sale Third Wednesday of Each Month

VOLUME XVI
Number 6

ASTOUNDING STORIES

FEBRUARY
1936

A STREET & SMITH PUBLICATION

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Cover Painting by Howard V. Brown

Story illustrations by Elliott Dold, Jr., Marchioni, Wesso, Brown, Thompson, Schneeman.

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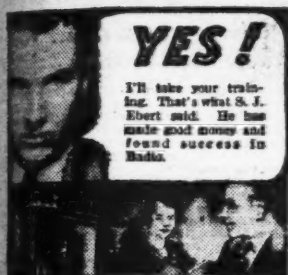
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to these
two men
when I said:



NO!

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Spare time and full time set servicing: in-salling, repairing, maintaining broadcast,



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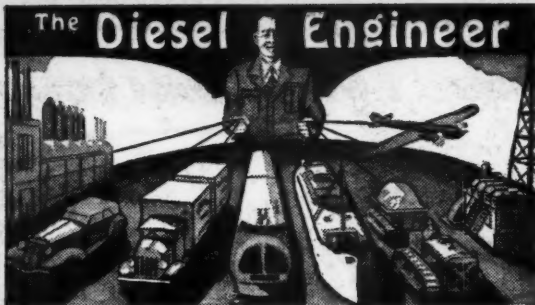
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Dr. W. R. George

Dr. Walter R. George, for many years Health Director of Indianapolis, says: "Insufficient kidney excretions are the cause of much needless suffering with Aching Back, Frequent Night Rising, Itching, Smarting, Burning, Painful Joints, Rheumatic Pains, Headaches, and a generally run-down body. I am of the opinion that the prescription Cystex corrects such functional conditions. It aids in flushing poisons from the urinary tract, and in freeing the blood of retained toxins. Cystex deserves the endorsement of all doctors." If you suffer from kidney and bladder dysfunction, delay endangers your vitality, and you should not lose a single minute in starting to take the doctor's special prescription called Cystex (pronounced Siss-tex) which helps kidney functions work fast, safe and sure. Gently tones, soothes, and cleanses raw, sore membranes. Brings new energy and vitality in 48 hours. It is helping millions of sufferers and is guaranteed to make you feel years younger and like new in 8 days, or money back on return of empty package. Telephone your druggist for Cystex today. The guarantee protects you.

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Prostate Sufferers



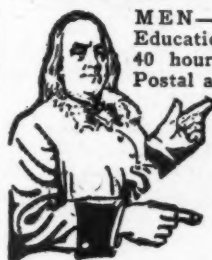
An enlarged, inflamed or faulty Prostate Gland very often causes Lameness, Frequent Night Rising, Leg Pains, Pelvic Pains, Lost Vigor, Insomnia, etc. Many physicians endorse massage as a safe effective treatment. (See Reference Book of the Medical Sciences, Vol. VII, 3rd edition). Use "PROSAGER," a new invention which enables any man to massage his Prostate Gland in the privacy of his home. It often brings relief with the first treatment and must help or it costs you nothing. No Drugs or Electricity.

DR. W. D. SMITH INVENTOR

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At the MOUNTAINS Part One of MADNESS

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parts—of science—and a lost world!*

by H. P. LOVECRAFT

I AM forced into speech because men of science have refused to follow my advice without knowing why. It is altogether against my will that I tell my reasons for opposing this contemplated invasion of the antarctic—with its vast fossil hunt and its wholesale boring and melting of the ancient ice caps. And I am the more reluctant because my warning may be in vain.

Doubt of the real facts, as I must reveal them, is inevitable; yet, if I suppressed what will seem extravagant and incredible there would be nothing left. The hitherto withheld photographs, both ordinary and aerial, will count in my favor, for they are damnably vivid and graphic. Still, they will be doubted because of the great lengths to which clever fakery can be carried. The ink drawings, of course, will be jeered at as obvious impostures; notwithstanding a strangeness and technique which art experts ought to remark and puzzle over.

In the end I must rely on the judgment and standing of the few scientific leaders who have, on the one hand, sufficient independence of thought to weigh my data on its own hideously convincing merits or in the light of certain primordial and highly baffling myth cycles;

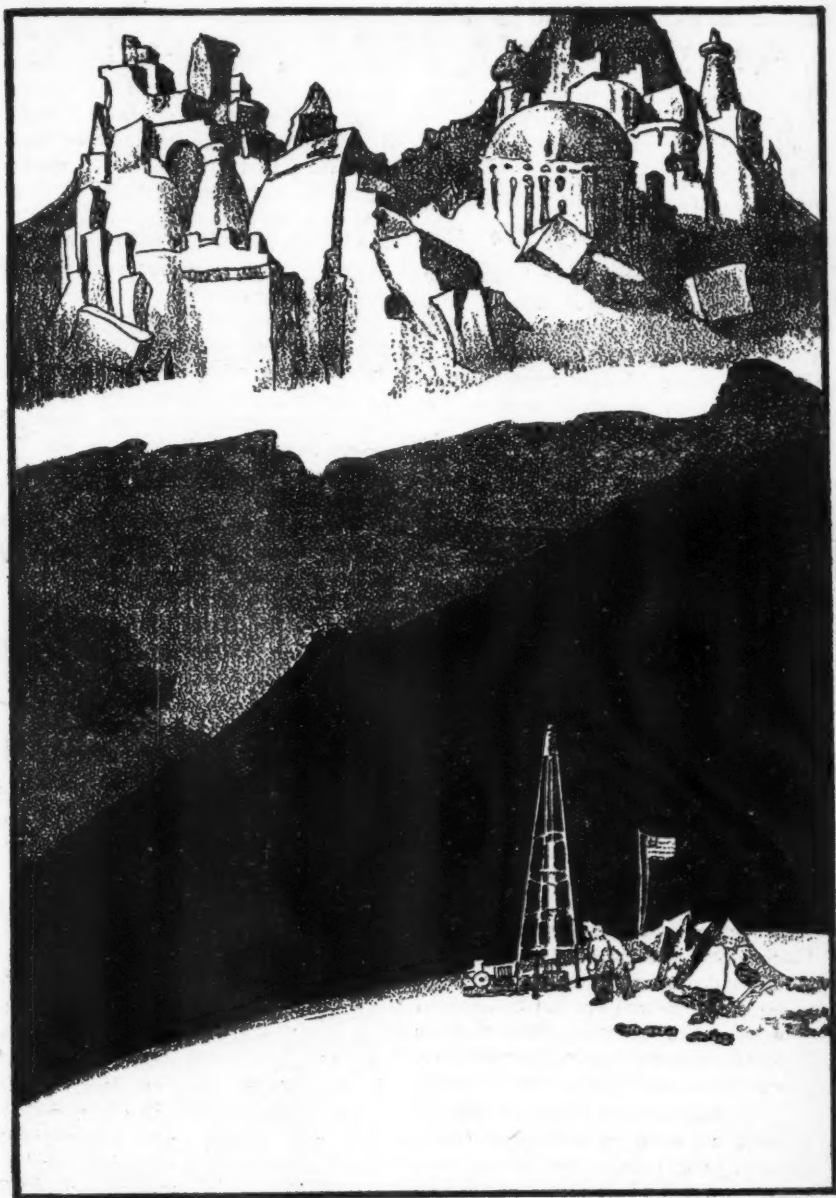
and on the other hand, sufficient influence to deter the exploring world in general from any rash and over-ambitious program in the region of those mountains of madness.

It is an unfortunate fact that relatively obscure men like myself and my associates, connected only with a small university, have little chance of making an impression where matters of a wildly bizarre or highly controversial nature are concerned.

It is further against us that we are not, in the strictest sense, specialists in the fields which came primarily to be concerned. As a geologist, my object in leading the Miskatonic University Expedition was wholly that of securing deep-level specimens of rock and soil from various parts of the antarctic continent, aided by the remarkable drill devised by Professor Frank H. Pabodie of our engineering department.

I had no wish to be a pioneer in any other field than this, but I did hope that the use of this new mechanical appliance at different points along previously explored paths would bring to light materials of a sort hitherto unreached by the ordinary methods of collection.

Pabodie's drilling apparatus, as the public already knows from our reports.



It was a queer state of sensations—being in the lee of vast, silent pinnacles, where ranks shot up like a wall reaching the sky at the world's rim.

was unique and radical in its lightness, portability, and capacity to combine the ordinary Artesian drill principle with the principle of the small circular rock drill in such a way as to cope quickly with strata of varying hardness.

Steel head, jointed rods, gasoline motor, collapsible wooden derrick, dynamiting paraphernalia, cording, rubbish-removal auger, and sectional piping for bores five inches wide and up to one thousand feet deep all formed, with needed accessories, no greater load than three seven-dog sledges could carry. This was made possible by the clever aluminum alloy of which most of the metal objects were fashioned.

Four large Dornier aeroplanes, designed especially for the tremendous altitude flying necessary on the antarctic plateau and with added fuel-warming and quick-starting devices worked out by Pabodie, could transport our entire expedition from a base at the edge of the great ice barrier to various suitable inland points, and from these points a sufficient quota of dogs would serve us.

We planned to cover as great an area as one antarctic season—or longer, if absolutely necessary—would permit, operating mostly in the mountain ranges and on the plateau south of Ross Sea; regions explored in varying degree by Shackleton, Amundsen, Scott, and Byrd. With frequent changes of camp, made by aeroplane and involving distances great enough to be of geological significance, we expected to unearth a quite unprecedented amount of material—especially in the pre-Cambrian strata of which so narrow a range of antarctic specimens had previously been secured.

We wished also to obtain as great as possible a variety of the upper fossiliferous rocks, since the primal life history of this bleak realm of ice and death is of the highest importance to our knowledge of the earth's past. That the antarctic continent was once

temperate and even tropical, with a teeming vegetable and animal life of which the lichens, marine fauna, arachnida, and penguins of the northern edge are the only survivals, is a matter of common information; and we hoped to expand that information in variety, accuracy, and detail. When a simple boring revealed fossiliferous signs, we would enlarge the aperture by blasting, in order to get specimens of suitable size and condition.

Our borings, of varying depth according to the promise held out by the upper soil or rock, were to be confined to exposed, or nearly exposed, land surfaces—these inevitably being slopes and ridges because of the mile or two-mile thickness of solid ice overlying the lower levels.

We could not afford to waste drilling depth on any considerable amount of more glaciation, though Pabodie had worked out a plan for sinking copper electrodes in thick clusters of borings and melting off limited areas of ice with current from a gasoline-driven dynamo.

It is this plan—which we could not put into effect except experimentally on an expedition such as ours—that the coming Starkweather-Moore Expedition proposes to follow, despite the warnings I have issued since our return from the antarctic.

THE PUBLIC knows of the Miskatonic Expedition through our frequent wireless reports to the *Arkham Advertiser* and Associated Press, and through the later articles by Pabodie and myself. We consisted of four men from the University—Pabodie, Lake of the biology department, Atwood of the physics department—also a meteorologist—and myself, representing geology and having nominal command, also sixteen assistants: seven graduate students from Miskatonic and nine skilled mechanics.

Of these sixteen, twelve were quali-

fied aeroplane pilots, all but two of whom were competent wireless operators. Eight of them understood navigation with compass and sextant, as did Pabodie, Atwood and I. In addition, of course, our two ships—wooden exwhalers, reinforced for ice conditions and having auxiliary steam—were fully manned.

The Nathaniel Derby Pickman Foundation, aided by a few special contributions, financed the expedition; hence our preparations were extremely thorough, despite the absence of great publicity.

The dogs, sledges, machines, camp materials, and unassembled parts of our five planes were delivered in Boston, and there our ships were loaded.

We were marvelously well-equipped for our specific purposes, and in all matters pertaining to supplies, regimen, transportation, and camp construction we profited by the excellent example of our many recent and exceptionally brilliant predecessors. It was the unusual number and fame of these predecessors which made our own expedition—ample though it was—so little noticed by the world at large.

As the newspapers told, we sailed from Boston Harbor on September 2nd, 1930, taking a leisurely course down the coast and through the Panama Canal, and stopping at Samoa and Hobart, Tasmania, at which latter place we took on final supplies.

None of our exploring party had ever been in the polar regions before, hence we all relied greatly on our ship captains—J. B. Douglas, commanding the brig *Arkham*, and serving as commander of the sea party, and Georg Thorfinnssen, commanding the barque *Miskatonic*—both veteran whalers in antarctic waters.

As we left the inhabited world behind the sun sank lower and lower in the north, and stayed longer and longer

above the horizon each day. At about 62° South Latitude we sighted our first icebergs—tablelike objects with vertical sides—and just before reaching the antarctic circle, which we crossed on October 20th with appropriately quaint ceremonies, we were considerably troubled with field ice.

The falling temperature bothered me considerably after our long voyage through the tropics, but I tried to brace up for the worse rigors to come. On many occasions the curious atmospheric effects enchanted me vastly; these included a strikingly vivid mirage—the first I had ever seen—in which distant bergs became the battlements of unimaginable cosmic castles.

Pushing through the ice, which was fortunately neither extensive nor thickly packed, we regained open water at South Latitude 67°, East Longitude 175°. On the morning of October 26th a strong land blink appeared on the south, and before noon we all felt a thrill of excitement at beholding a vast, lofty, and snow-clad mountain chain which opened out and covered the whole vista ahead. At last we had encountered an outpost of the great unknown continent and its cryptic world of frozen death.

These peaks were obviously the Admiralty Range discovered by Ross, and it would now be our task to round Cape Adare and sail down the east coast of Victoria Land to our contemplated base on the shore of McMurdo Sound, at the foot of the volcano Erebus in South Latitude 77° 9'.

THE LAST LAP of the voyage was vivid and fancy-stirring. Great barren peaks of mystery loomed up constantly against the west as the low northern sun of noon or the still lower horizon-grazing southern sun of midnight poured its hazy reddish rays over the white snow, bluish ice and water lanes, and black bits of exposed granite slope.

Through the desolate summits swept raging, intermittent gusts of the terrible antarctic wind, whose cadences sometimes held vague suggestions of a wild and half-sentient musical piping, with notes extending over a wide range, and which for some subconscious mnemonic reason seemed to me disquieting and even dimly terrible.

Something about the scene reminded me of the strange and disturbing Asian paintings of Nicholas Roerich, and of the still stranger and more disturbing descriptions of the evilly fabled plateau of Leng which occur in the dreaded *Necronomicon* of the mad Arab Abdul Alhazred. I was rather sorry, later on, that I had ever looked into that monstrous book at the college library.

On the 7th of November, sight of the westward range having been temporarily lost, we passed Franklin Island; and the next day descried the cones of Mts. Erebus and Terror on Ross Island ahead, with the long line of the Parry Mountains beyond. There now stretched off to the east the low, white line of the great ice barrier, rising perpendicularly to a height of two hundred feet like the rocky cliffs of Quebec, and marking the end of southward navigation.

In the afternoon we entered McMurdo Sound, and stood off the coast in the lee of smoking Mt. Erebus. The scoriaceous peak towered up some twelve thousand seven hundred feet against the eastern sky, like a Japanese print of the sacred Fujiyama, while beyond it rose the white, ghostlike height of Mt. Terror, ten thousand nine hundred feet in altitude, and now extinct as a volcano.

Puffs of smoke from Erebus came intermittently, and one of the graduate assistants—a brilliant young fellow named Danforth—pointed out what looked like lava on the snowy slope, remarking that this mountain, discovered in 1840, had undoubtedly been the

source of Poe's image when he wrote seven years later:

"—the lavas that restlessly roll
Their sulphurous currents down Yaanek
In the ultimate climes of the pole—
That groan as they roll down Mount Yaanek
In the realms of the boreal pole."

Danforth was a great reader of bizarre material, and had talked a good deal of Poe. I was interested myself because of the antarctic scene of Poe's only long story—the disturbing and enigmatical *Arthur Gordon Pym*. On the barren shore, and on the lofty ice barrier in the background, myriad of grotesque penguins squawked and flapped their fins, while many fat seals were visible on the water, swimming or sprawling across large cakes of slowly drifting ice.

Using small boats, we effected a difficult landing on Ross Island shortly after midnight, on the morning of the 9th, carrying a line of cable from each of the ships and preparing to unload supplies by means of a breeches-buoy arrangement.

Our sensations on first treading antarctic soil were poignant and complex, even though at this particular point the Scott and Shackleton expeditions had preceded us.

Our camp on the frozen shore below the volcano's slope was only a provisional one, headquarters being kept aboard the *Arkham*. We landed all our drilling apparatus, dogs, sledges, tents, provisions, gasoline tanks, experimental ice-melting outfit, cameras, both ordinary and aerial, aeroplane parts, and other accessories, including three small portable wireless outfits—besides those in the planes—capable of communicating with the *Arkham's* large outfit from any part of the antarctic continent that we would be likely to visit.

The ship's outfit, communicating with the outside world, was to convey press reports to the *Arkham Advertiser's*

powerful wireless station on Kingsport Head, Mass. We hoped to complete our work during a single antarctic summer; but if this proved impossible we would winter on the *Arkham*, sending the *Miskatonic* north before the freezing of the ice for another summer's supplies.

I NEED NOT REPEAT what the newspapers have already published about our early work: of our ascent of Mt. Erebus; our successful mineral borings at several points on Ross Island and the singular speed with which Pabodie's apparatus accomplished them, even through solid rock layers; our provisional test of the small ice-melting equipment; our perilous ascent of the great barrier with sledges and supplies; and our final assembling of five huge *aéroplanes* at the camp atop the barrier.

The health of our land party—twenty men and fifty-five Alaskan sledge dogs—was remarkable, though of course we had so far encountered no really destructive temperatures or windstorms.

For the most part, the thermometer varied between zero and 20° or 25° above, and our experience with New England winters had accustomed us to rigors of this sort. The barrier camp was semipermanent, and destined to be a storage cache for gasoline, provisions, dynamite, and other supplies.

Only four of our planes were needed to carry the actual exploring material, the fifth being left with a pilot and two men, from the ships, at the storage cache to form a means of reaching us from the *Arkham* in case all our exploring planes were lost.

Later, when not using all the other planes for moving apparatus, we would employ one or two in a shuttle transportation service between this cache and another permanent base on the great plateau from six hundred to seven hundred miles southward, beyond Beardmore Glacier.

Despite the almost unanimous accounts of appalling winds and tempests that pour down from the plateau, we determined to dispense with intermediate bases, taking our chances in the interest of economy and probable efficiency.

Wireless reports have spoken of the breathtaking, four-hour, nonstop flight of our squadron on November 21st over the lofty shelf ice, with vast peaks rising on the west, and the unfathomed silences echoing to the sound of our engines.

Wind troubled us only moderately, and our radio compasses helped us through the one opaque fog we encountered. When the vast rise loomed ahead, between Latitudes 83° and 84°, we knew we had reached Beardmore Glacier, the largest valley glacier in the world, and that the frozen sea was now giving place to a frowning and mountainous coast line.

At last we were truly entering the white, æon-dead world of the ultimate south. Even as we realized it we saw the peak of Mt. Nansen in the eastern distance, towering up to its height of almost fifteen thousand feet.

The successful establishment of the southern base above the glacier in Latitude 86° 7', East Longitude 174° 23', and the phenomenally rapid and effective borings and blastings made at various points reached by our sledge trips and short *aéroplane* flights, are matters of history; as is the arduous and triumphant ascent of Mt. Nansen by Pabodie and two of the graduate students—Gedney and Carroll—on December 13th to 15th.

We were some eight thousand five hundred feet above sea-level. When experimental drillings revealed solid ground only twelve feet down through the snow and ice at certain points, we made considerable use of the small melting apparatus and sunk bores and performed dynamiting at many places,

where no previous explorer had ever thought of securing mineral specimens.

The pre-Cambrian granites and beacon sandstones thus obtained confirmed our belief that this plateau was homogeneous, with the great bulk of the continent to the west, but somewhat different from the parts lying eastward below South America—which we then thought to form a separate and smaller continent divided from the larger one by a frozen junction of Ross and Weddell Seas, though Byrd has since disproved the report.

In certain of the sandstones, dynamited and chiseled after boring revealed their nature, we found some highly interesting fossil markings and fragments; notably ferns, seaweeds, trilobites, crinoids, and such mollusks as *linguella* and gastropods—all of which seemed of real significance in connection with the region's primordial history. There was also a queer triangular, striated marking, about a foot in greatest diameter, which Lake pieced together from three fragments of slate brought up from a deep-blasted aperture.

These fragments came from a point to the westward, near the Queen Alexandra Range; and Lake, as a biologist, seemed to find their curious marking unusually puzzling and provocative, though to my geological eye it looked not unlike some of the ripple effects reasonably common in the sedimentary rocks.

Since slate is no more than a metamorphic formation into which a sedimentary stratum is pressed, and since the pressure itself produces odd distorting effects on any markings which may exist, I saw no reason for extreme wonder over the striated depression.

ON JANUARY 6, 1931, Lake, Pabodie, Daniels, all six of the students, four mechanics, and myself flew di-

rectly over the south pole in two of the great planes, being forced down once by a sudden high wind, which, fortunately, did not develop into a typical storm. This was, as the papers have stated, one of several observation flights, during others of which we tried to discern new topographical features in areas unreached by previous explorers.

Our early flights were disappointing in this latter respect, though they afforded us some magnificent examples of the richly fantastic and deceptive mirages of the polar regions, of which our sea voyage had given us some brief foretastes.

Distant mountains floated in the sky as enchanted cities, and often the whole white world would dissolve into a gold, silver, and scarlet land of Dunsanian dreams and adventurous expectancy under the magic of the low midnight sun.

On cloudy days we had considerable trouble in flying, owing to the tendency of snowy earth and sky to merge into one mystical opalescent void with no visible horizon to mark the junction of the two.

At length we resolved to carry out our original plan of flying five hundred miles eastward with all four exploring planes and establishing a fresh sub-base at a point which would probably be on the smaller continental division, as we mistakenly conceived it. Geological specimens obtained there would be desirable for purposes of comparison.

Our health so far had remained excellent—lime juice well offsetting the steady diet of tinned and salted food, and temperatures generally above zero enabling us to do without our thickest furs.

It was now midsummer, and with haste and care we might be able to conclude work by March and avoid a tedious wintering through the long antarctic night. Several savage windstorms had burst upon us from the

west, but we had escaped damage through the skill of Atwood in devising rudimentary aeroplane shelters and windbreaks of heavy snow blocks, and in reinforcing the principal camp buildings with snow. Our good luck and efficiency had indeed been almost uncanny.

The outside world knew, of course, of our program, and was told also of Lake's strange and dogged insistence on a westward—or rather, northwestward—prospecting trip before our radical shift to the new base.

It seems that he had pondered a great deal and with alarmingly radical daring over that triangular striated marking in the slate; reading into it certain contradictions in nature and geological period which whetted his curiosity to the utmost, and made him avid to sink more borings and blastings in the west-stretching formation to which the exhumed fragments evidently belonged.

He was strangely convinced that the marking was the print of some bulky, unknown, and radically unclassifiable organism of considerably advanced evolution, notwithstanding that the rock which bore it was of so vastly ancient a date—Cambrian if not actually pre-Cambrian—as to preclude the probable existence not only on all highly evolved life, but of any life at all above the unicellular or at most the trilobite stage. These fragments, with their odd marking, must have been five hundred million to a thousand million years old.

II.

POPULAR IMAGINATION, I judge, responded actively to our wireless bulletins of Lake's start northwestward into regions never trodden by human foot or penetrated by human imagination, though we did not mention his wild hopes of revolutionizing the entire sciences of biology and geology.

His preliminary sledging and boring journey of January 11th to 18th with Pabodie and five others—marred by the loss of two dogs in an upset when crossing one of the great pressure ridges in the ice—had brought up more and more of the Archæan slate; and even I was interested by the singular profusion of evident fossil markings in that unbelievably ancient stratum.

These markings, however, were of very primitive life forms involving no great paradox except that any life forms should occur in rock as definitely pre-Cambrian as this seemed to be; hence I still failed to see the good sense of Lake's demand for an interlude in our time-saving program—an interlude requiring the use of all four planes, many men, and the whole of the expedition's mechanical apparatus.

I did not, in the end, veto the plan, though I decided not to accompany the northwestward party despite Lake's plea for my geological advice. While they were gone, I would remain at the base with Pabodie and five men and work out final plans for the eastward shift. In preparation for this transfer, one of the planes had begun to move up a good gasoline supply from McMurdo Sound; but this could wait temporarily. I kept with me one sledge and nine dogs, since it is unwise to be at any time without possible transportation in an utterly tenantless world of æon-long death.

Lake's subexpedition into the unknown, as every one will recall, sent out its own reports from the short-wave transmitters on the planes; these being simultaneously picked up by our apparatus at the southern base and by the *Arkham* at McMurdo Sound, whence they were relayed to the outside world on wave lengths up to fifty meters.

The start was made January 22nd at 4 a. m.; and the first wireless message we received came only two hours later,

when Lake spoke of descending and starting a small-scale ice-melting and bore at a point some three hundred miles away from us. Six hours after that a second and very excited message told of the frantic, beaverlike work whereby a shallow shaft had been sunk and blasted, culminating in the discovery of slate fragments with several markings approximately like the one which had caused the original puzzlement.

Three hours later a brief bulletin announced the resumption of the flight in the teeth of a raw and piercing gale; and when I dispatched a message of protest against further hazards, Lake replied curtly that his new specimens made any hazard worth taking.

I saw that his excitement had reached the point of mutiny, and that I could do nothing to check this headlong risk of the whole expedition's success; but it was appalling to think of his plunging deeper and deeper into that treacherous and sinister white immensity of tempests and unfathomed mysteries which stretched off for some fifteen hundred miles to the half-known, half-suspected coast line of Queen Mary and Knox Lands.

THEN, in about an hour and a half more, came that doubly excited message from Lake's moving plane, which almost reversed my sentiments and made me wish I had accompanied the party:

"10:05 p. m. On the wing. After snowstorm, have spied mountain range ahead higher than any hitherto seen. May equal Himalayas, allowing for height of plateau. Probable Latitude $76^{\circ} 15'$, Longitude $113^{\circ} 10'$ E. Reaches far as can see to right and left. Suspicion of two smoking cones. All peaks black and bare of snow. Gale blowing off them impedes navigation."

After that Pabodie, the men, and I hung breathlessly over the receiver. Thought of this titanic mountain rampart seven hundred miles away inflamed

our deepest sense of adventure; and we rejoiced that our expedition, if not ourselves personally, had been its discoverers. In half an hour Lake called us again:

"Moulton's plane forced down on plateau in foothills, but nobody hurt and perhaps can repair. Shall transfer essentials to other three for return or further moves if necessary, but no more heavy plane travel needed just now. Mountains surpass anything in imagination. Am going up scouting in Carroll's plane, with all weight out.

"You can't imagine anything like this. Highest peaks must go over thirty-five thousand feet. Everest out of the running. Atwood to work out height with theodolite while Carroll and I go up. Probably wrong about cones, for formations look stratified. Possibly pre-Cambrian slate with other strata mixed in. Queer sky line effects—regular sections of cubes clinging to highest peaks. Whole thing marvelous in red-gold light of low sun. Like land of mystery in a dream or gateway to forbidden world of untrodden wonder. Wish you were here to study."

Though it was technically sleeping time, not one of us listeners thought for a moment of retiring. It must have been a good deal the same at McMurdo Sound, where the supply cache and the *Arkham* were also getting the messages; for Captain Douglas gave out a call congratulating everybody on the important find, and Sherman, the cache operator, seconded his sentiments. We were sorry, of course, about the damaged aeroplane, but hoped it could be easily mended. Then, at eleven p. m., came another call from Lake:

"Up with Carroll over highest foothills. Don't dare try really tall peaks in present weather, but shall later. Frightful work climbing, and hard going at this altitude, but worth it. Great range fairly solid, hence can't get any glimpses beyond. Main summits exceed Himalayas, and very queer. Range looks like pre-Cambrian slate, with plain signs of many other upheaved strata. Was wrong about volcanism. Goes farther in either direc-

tion than we can see. Swept clear of snow above about twenty-one thousand feet.

"Odd formations on slopes of highest mountains. Great low square blocks with exactly vertical sides, and rectangular lines of low, vertical ramparts, like the old Asian castles clinging to steep mountains in Roerich's paintings. Impressive from distance. Flew close to some, and Carroll thought they were formed of smaller separate pieces, but that is probably weathering. Most edges crumbled and rounded off as if exposed to storms and climate changes for millions of years.

"Parts, especially upper parts, seem to be of lighter-colored rock than any visible strata on slopes proper, hence an evidently crystalline origin. Close flying shows many cave mouths, some unusually regular in outline, square or semicircular. You must come and investigate. Think I saw rampart squarely on top of one peak. Height seems about thirty thousand to thirty-five thousand feet. Am up twenty-one thousand five hundred myself, in devilish, gnawing cold. Wind whistles and pipes through passes and in and out of caves, but no flying danger so far."

From then on for another half hour Lake kept up a running fire of comment, and expressed his intention of climbing some of the peaks on foot. I replied that I would join him as soon as he could send a plane, and that Pabodie and I would work out the best gasoline plan—just where and how to concentrate our supply in view of the expedition's altered character.

Obviously, Lake's boring operations, as well as his aeroplane activities, would need a great deal delivered at the new base which he was to establish at the foot of the mountains; and it was possible that the eastward flight might not be made, after all, this season. In connection with this business I called Captain Douglas and asked him to get as much as possible out of the ships and up the barrier with the single dog team we had left there. A direct route across the unknown region between Lake and McMurdo Sound was what we really ought to establish.

AST—2

Lake called me later to say that he had decided to let the camp stay where Moulton's plane had been forced down, and where repairs had already progressed somewhat. The ice sheet was very thin, with dark ground here and there visible, and he would sink some borings and blasts at that very point before making any sledge trips or climbing expeditions.

He spoke of the ineffable majesty of the whole scene, and the queer state of his sensations at being in the lee of vast, silent pinnacles, whose ranks shot up like a wall reaching the sky at the world's rim.

Atwood's theodolite observations had placed the height of the five tallest peaks at from thirty thousand to thirty-four thousand feet.

The windswept nature of the terrain clearly disturbed Lake, for it argued the occasional existence of prodigious gales, violent beyond anything we had so far encountered. His camp lay a little more than five miles from where the higher foothills rose abruptly.

I could almost trace a note of subconscious alarm in his words—flashed across a glacial void of seven hundred miles—as he urged that we all hasten with the matter and get the strange, new region disposed of as soon as possible. He was about to rest now, after a continuous day's work of almost unparalleled speed, strenuousness, and results.

IN THE MORNING I had a three-cornered wireless talk with Lake and Captain Douglas at their widely separated bases. It was agreed that one of Lake's planes would come to my base for Pabodie, the five men, and myself, as well as for all the fuel it could carry. The rest of the fuel question, depending on our decision about an easterly trip, could wait for a few days, since Lake had enough for immediate camp heat and borings.

Eventually the old southern base ought to be restocked, but if we postponed the easterly trip we would not use it till the next summer, and, meanwhile, Lake must send a plane to explore a direct route between his new mountains and McMurdo Sound.

Pabodie and I prepared to close our base for a short or long period, as the case might be. If we wintered in the antarctic we would probably fly straight from Lake's base to the *Arkham* without returning to this spot. Some of our conical tents had already been reinforced by blocks of hard snow, and now we decided to complete the job of making a permanent village. Owing to a very liberal tent supply, Lake had with him all that his base would need, even after our arrival. I wirelessly that Pabodie and I would be ready for the northwestward move after one day's work and one night's rest.

Our labors, however, were not very steady after four p. m., for about that time Lake began sending in the most extraordinary and excited messages. His working day had started unpropitiously, since an aeroplane survey of the nearly exposed rock surfaces showed an entire absence of those Archæan and primordial strata for which he was looking, and which formed so great a part of the colossal peaks that loomed up at a tantalizing distance from the camp.

Most of the rocks glimpsed were apparently Jurassic and Comanchian sandstones and Permian and Triassic schists, with now and then a glossy black outcropping suggesting a hard and slaty coal.

This rather discouraged Lake, whose plans all hinged on unearthing specimens more than five hundred million years older. It was clear to him that in order to recover the Archæan slate vein in which he had found the odd markings, he would have to make a long sledge trip from these foothills to the

steep slopes of the gigantic mountains themselves.

He had resolved, nevertheless, to do some local boring as part of the expedition's general program; hence, he set up the drill and put five men to work with it while the rest finished settling the camp and repairing the damaged aeroplane. The softest visible rock—a sandstone about a quarter of a mile from the camp—had been chosen for the first sampling; and the drill made excellent progress without much supplementary blasting.

It was about three hours afterward, following the first really heavy blast of the operation, that the shouting of the drill crew was heard; and that young Gedney—the acting foreman—rushed into the camp with the startling news.

THEY had struck a cave. Early in the boring the sandstone had given place to a vein of Comanchian limestone, full of minute fossil cephalopods, corals, echini, and spirifera, and with occasional suggestions of siliceous sponges and marine vertebrate bones—the latter probably of teliosts, sharks, and ganoids.

This, in itself, was important enough, as affording the first vertebrate fossils the expedition had yet secured; but when shortly afterward the drill head dropped through the stratum into apparent vacancy, a wholly new and doubly intense wave of excitement spread among the excavators.

A good-sized blast had laid open the subterranean secret; and now, through a jagged aperture perhaps five feet across and three feet thick, there yawned before the avid searchers a section of shallow limestone hollowing worn more than fifty million years ago by the trickling ground waters of a bygone tropic world.

The hollowed layer was not more than seven or eight feet deep, but extended off indefinitely in all directions

and had a fresh, slightly moving air which suggested its membership in an extensive subterranean system. Its roof and floor were abundantly equipped with large stalactites and stalagmites, some of which met in columnar form.

But important above all else was the vast deposit of shells and bones, which in places nearly choked the passage. Washed down from unknown jungles of Mesozoic tree ferns and fungi, and forests of Tertiary cycads, fan palms, and primitive angiosperms, this osseous medley contained representatives of more Cretaceous, Eocene, and other animal species than the greatest paleontologist could have counted or classified in a year. Mollusks, crustacean armor, fishes, amphibians, reptiles, birds, and early mammals—great and small, known and unknown.

No wonder Gedney ran back to the camp shouting, and no wonder every one else dropped work and rushed headlong through the biting cold to where the tall derrick marked a new-found gateway to secrets of inner earth and vanished æons.

When Lake had satisfied the first keen edge of his curiosity he scribbled a message in his notebook and had young Moulton run back to the camp to dispatch it by wireless.

This was my first word of the discovery, and it told of the identification of early shells, bones of ganoids and placoderms, remnants of labyrinthodonta and thecoiidea, great mosasaur skull fragments, dinosaur vertebrae and armor plates, pterodactyl teeth and wing bones, Archaeopteryx debris, Miocene sharks' teeth, primitive bird skulls, and other bones of archaic mammals such as Palæotheres, Xiphodons, Eohippi, Oreodons, and Titanotheriidae.

There was nothing as recent as a mastodon, elephant, true camel, deer, or bovine animal; hence Lake concluded that the last deposits had occurred dur-

ing the Oligocene Age, and that the hollowed stratum had lain in its present dried, dead, and inaccessible state for at least thirty million years.

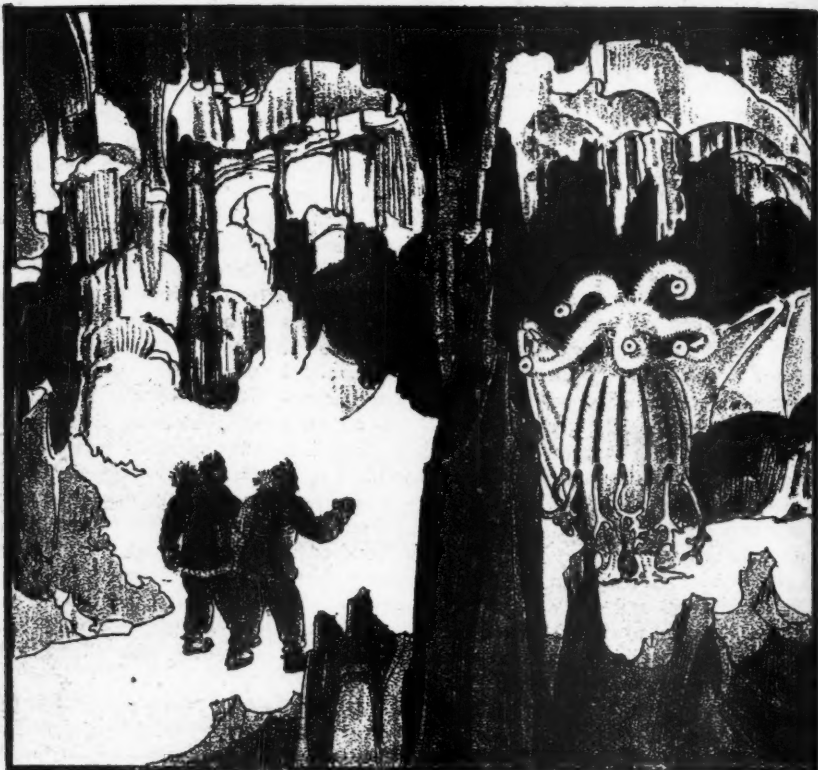
On the other hand, the prevalence of very early life forms was singular in the highest degree. Though the limestone formation was, on the evidence of such typical imbedded fossils as ventriculites, positively and unmistakably Comanchian and not a particle earlier; the free fragments in the hollow space included a surprising proportion from organisms hitherto considered as peculiar to far older periods—even rudimentary fishes, mollusks, and corals as remote as the Silurian or Ordovician.

The inevitable inference was that in this part of the world there had been a remarkable and unique degree of continuity between the life of over three hundred million years ago and that of only thirty million years ago. How far this continuity had extended beyond the Oligocene Age when the cavern was closed was of course past all speculation.

In any event, the coming of the frightful ice in the Pleistocene some five hundred thousand years ago—a mere yesterday as compared with the age of this cavity—must have put an end to any of the primal forms which had locally managed to outlive their common terms.

LAKE was not content to let his first message stand, but had another bulletin written and dispatched across the snow to the camp before Moulton could get back. After that Moulton stayed at the wireless in one of the planes, transmitting to me—and to the *Arkham* for relaying to the outside world—the frequent postscripts which Lake sent him by a succession of messengers.

Those who followed the newspapers will remember the excitement created among men of science by that afternoon's reports—reports which have



"I've got to dissect one of these things before——"

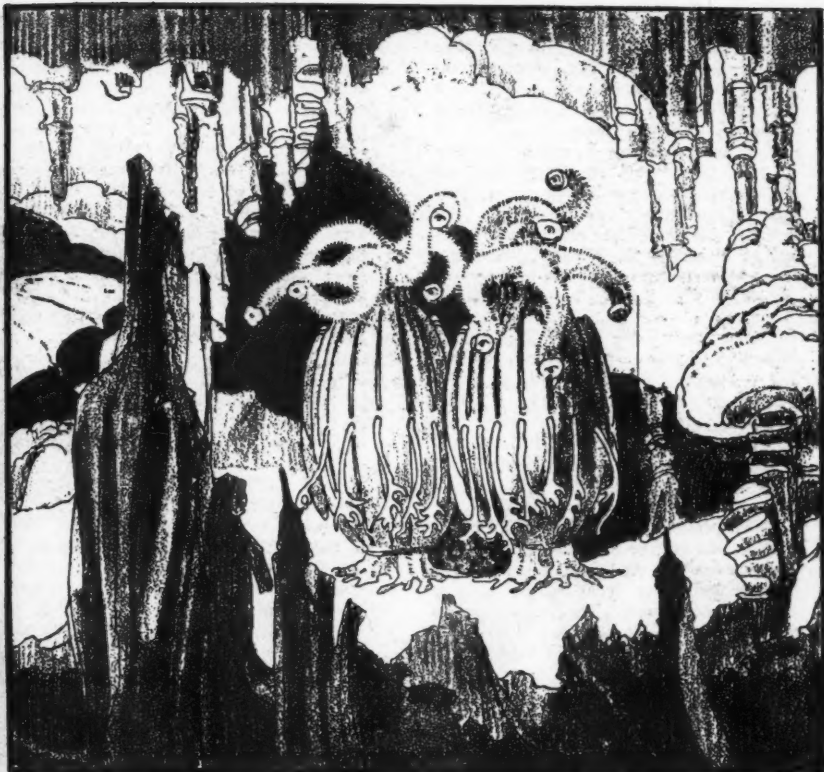
finally led, after all these years, to the organization of that very Starkweather-Moore Expedition which I am so anxious to dissuade from its purposes. I had better give the messages literally as Lake sent them, and as our base operator McTighe translated them from his pencil shorthand:

Fowler makes discovery of highest importance in sandstone and limestone fragments from blasts. Several distinct triangular striated prints like those in archæan slate, proving that source survived from over six hundred million years ago to Comanchian times without more than moderate morphological changes and decrease in average size. Comanchian prints apparently more primitive or decadent, if anything, than older ones. Em-

phasize importance of discovery in press. Will mean to biology what Einstein has meant to mathematics and physics. Joins up with my previous work and amplifies conclusions.

Appears to indicate, as I suspected, that earth has seen whole cycle or cycles of organic life before known one that begins with Archæozoic cells. Was evolved and specialized not later than a thousand million years ago, when planet was young and recently uninhabitable for any life forms of normal protoplasmic structure. Question arises when, where, and how development took place.

Later. Examining certain skeletal fragments of large land and marine saurians and primitive mammals, find singular local wounds or injuries to bony structure



"First the world's greatest mountains—then this!"

not attributable to any known predatory or carnivorous animal of any period. Of two sorts—straight, penetrant bores, and apparently hacking incisions. One or two cases of cleanly severed bones. Not many specimens affected. Am sending to camp for electric torches. Will extend search area underground by hacking away stalactites.

Still later. Have found peculiar soapstone fragment about six inches across and an inch and a half thick, wholly unlike any visible local formation—greenish, but no evidences to place its period. Has curious smoothness and regularity. Shaped like five-pointed star with tips broken off, and signs of other cleavage at inward angles and in center of surface. Small, smooth depression in center of un-

broken surface. Arouses much curiosity as to source and weathering. Probably some freak of water action. Carroll, with magnifier, thinks he can make out additional markings of geologic significance. Groups of tiny dots in regular patterns. Dogs growing uneasy as we work, and seem to hate this soapstone. Must see if it has any peculiar odor. Will report again when Mills gets back with light and we start on underground area.

10:15 p. m. Important discovery. Orrendorf and Watkins, working underground at 9:45 with light, found monstrous barrel-shaped fossil of wholly unknown nature; probably vegetable unless overgrown specimen of unknown marine radiata. Tissue evidently preserved by mineral salts. Tough as leather, but as-

tonishing flexibility retained in places. Marks of broken-off parts at ends and around sides. Six feet end to end, three and five tenths feet central diameter, tapering to one foot at each end. Like a barrel with five bulging ridges in place of staves. Lateral breakages, as of thinnish stalks, are at equator in middle of these ridges. In furrows between ridges are curious growths—combs or wings that fold up and spread out like fans. All greatly damaged but one, which gives almost seven-foot wing spread. Arrangement reminds one of certain monsters of primal myth, especially fabled Elder Things in *Necronomicon*.

These wings seem to be membranous, stretched on framework of glandular tubing. Apparent minute orifices in frame tubing at wing tips. Ends of body shriveled, giving no clue to interior or to what has been broken off there. Must dissect when we get back to camp. Can't decide whether vegetable or animal. Many features obviously of almost incredible primitiveness. Have set all hands cutting stalactites and looking for further specimens. Additional scarred bones found, but these must wait. Having trouble with dogs. They can't endure the new specimen, and would probably tear it to pieces if we didn't keep it at a distance from them.

11:30 p. m. Attention, Dyer, Pabodie, Douglas. Matter of highest—I might say transcendent—importance. *Arkham* must relay to Kingsport Head Station at once. Strange barrel growth is the archæan thing that left prints in rocks. Mills, Boudreau, and Fowler discover cluster of thirteen more at underground point forty feet from aperture. Mixed with curiously rounded and configured soapstone fragments smaller than one previously found—star-shaped, but no marks of breakage except at some of the points.

Of organic specimens, eight apparently perfect, with all appendages. Have brought all to surface, leading off dogs to distance. They cannot stand the things. Give close attention to description and repeat back for accuracy. Papers must get this right.

Objects are eight feet long all over. Six-foot, five-ridged barrel torso three and five tenths feet central diameter, one foot end diameters. Dark gray, flexible, and infinitely tough. Seven-foot mem-

branous wings of same color, found folded, spread out of furrows between ridges. Wing framework tubular or glandular, or lighter gray, with orifices at wing tips. Spread wings have serrated edge. Around equator, one at central apex of each of the five vertical, stavelike ridges, are five systems of light-gray flexible arms or tentacles found tightly folded to torso but expandable to maximum length of over three feet. Like arms of primitive crinoid. Single stalks three inches diameter branch after six inches into five substalks, each of which branches after eight inches into five small, tapering tentacles or tendrils, giving each stalk a total of twenty-five tentacles.

At top of torso blunt, bulbous neck of lighter gray, with gill-like suggestions, holds yellowish five-pointed starfish-shaped apparent head covered with three-inch wiry cilia of various prismatic colors.

Head thick and puffy, about two feet point to point, with three-inch flexible yellowish tubes projecting from each point. Slit in exact center of top probably breathing aperture. At end of each tube is spherical expansion where yellowish membrane rolls back on handling to reveal glassy, red-irised globe, evidently an eye.

Five slightly longer reddish tubes start from inner angles of starfish-shaped head and end in saclike swellings of same color which, upon pressure, open to bell-shaped orifices two inches maximum diameter and lined with sharp, white tooth-like projections—probable mouths. All these tubes, cilia, and points of starfish head, found folded tightly down; tubes and points clinging to bulbous neck and torso. Flexibility surprising despite vast toughness.

At bottom of torso, rough but dissimilarly functioning counterparts of head arrangements exist. Bulbous light-gray pseudoneck, without gill suggestions, holds greenish five-pointed starfish arrangement.

Tough, muscular arms four feet long and tapering from seven inches diameter at base to about two and five tenths at point. To each point is attached small end of a greenish five-veined membranous triangle eight inches long and six wide at farther end. This is the paddle, fin, or pseudofoot which had made prints in rocks from a thousand million to fifty or sixty million years old.

From inner angles of starfish arrange-

ment project two-foot reddish tubes tapering from three inches diameter at base to one at tip. Orifices at tips. All these parts infinitely tough and leathery, but extremely flexible. Four-foot arms with paddles undoubtedly used for locomotion of some sort, marine or otherwise. When moved, display suggestions of exaggerated muscularity. As found, all these projections tightly folded over pseudoneck and end of torso, corresponding to projections at other end.

Cannot yet assign positively to animal or vegetable kingdom, but odds now favor animal. Probably represents incredibly advanced evolution of radiata without loss of certain primitive features. Echinoderm at a resemblances unmistakable despite local contradictory evidences.

Wing structure puzzles in view of probable marine habitat, but may have use in water navigation. Symmetry is curiously vegetablelike, suggesting vegetable's essential up-and-down structure rather than animal's fore-and-aft structure. Fabulously early date of evolution, preceding even simplest archæan Protozoa hitherto known, baffles all conjecture as to origin.

Complete specimens have such uncanny resemblance to certain creatures of primal myth that suggestion of ancient existence outside antarctic becomes inevitable. Dyer and Pabodie have read *Necronomicon* and seen Clark Ashton Smith's nightmare paintings based on text, and will understand when I speak of Elder Things supposed to have created all earth life as jest or mistake. Students have always thought conception formed from morbid imaginative treatment of very ancient tropical radiata. Also like prehistoric folklore things Wilmarth has spoken of—Cthulhu cult appendages, etc.

Vast field of study opened. Deposits probably of late Cretaceous or early Eocene period, judging from associated specimens. Massive stalagmites deposited above them. Hard work hewing out, but toughness prevented damage. State of preservation miraculous, evidently owing to limestone action. No more found so far, but will resume search later. Job now to get fourteen huge specimens to camp without dogs, which bark furiously and can't be trusted near them.

With nine men—three left to guard the dogs—we ought to manage the three sledges fairly well, though wind is bad. Must establish plane communication with McMurdo Sound and begin shipping ma-

terial. But I've got to dissect one of these things before we take any rest. Wish I had a real laboratory here. Dyer better kick himself for having tried to stop my westward trip. First the world's greatest mountains, and then this. If this last isn't the high spot of the expedition, I don't know what is. We're made scientifically. Congrats, Pabodie, on the drill that opened up the cave. Now will *Arkham* please repeat description?

THE SENSATIONS of Pabodie and myself at receipt of this report were almost beyond description, nor were our companions much behind us in enthusiasm. McTighe, who had hastily translated a few high spots as they came from the droning receiving set, wrote out the entire message from his shorthand version, as soon as Lake's operator signed off.

All appreciated the epoch-making significance of the discovery, and I sent Lake congratulations as soon as the *Arkham's* operator had repeated back the descriptive parts as requested; and my example was followed by Sherman from his station at the McMurdo Sound supply cache, as well as by Captain Douglas of the *Arkham*.

Later, as head of the expedition, I added some remarks to be relayed through the *Arkham* to the outside world. Of course, rest was an absurd thought amidst this excitement; and my only wish was to get to Lake's camp as quickly as I could. It disappointed me when he sent word that a rising mountain gale made early aerial travel impossible.

But within an hour and a half interest again rose to banish disappointment. Lake, sending more messages, told of the completely successful transportation of the fourteen great specimens to the camp. It had been a hard pull, for the things were surprisingly heavy; but nine men had accomplished it very neatly. Now some of the party were hurriedly building a snow corral at a safe distance from the camp, to

which the dogs could be brought for greater convenience in feeding. The specimens were laid out on the hard snow near the camp, save for one on which Lake was making crude attempts at dissection.

This dissection seemed to be a greater task than had been expected, for, despite the heat of a gasoline stove in the newly raised laboratory tent, the deceptively flexible tissues of the chosen specimen—a powerful and intact one—lost nothing of their more than leathery toughness. Lake was puzzled as to how he might make the requisite incisions without violence destructive enough to upset all the structural niceties he was looking for.

He had, it is true, seven more perfect specimens; but these were too few to use up recklessly unless the cave might later yield an unlimited supply. Accordingly, he removed the specimen and dragged in one which, though having remnants of the starfish arrangements at both ends, was badly crushed and partly disrupted along one of the great torso furrows.

Results, quickly reported over the wireless, were baffling and provocative indeed. Nothing like delicacy or accuracy was possible with instruments hardly able to cut the anomalous tissue, but the little that was achieved left us all awed and bewildered.

Existing biology would have to be wholly revised, for this thing was no product of any cell growth science knows about. There had been scarcely any mineral replacement, and despite an age of perhaps forty million years the internal organs were wholly intact.

The leathery, undeteriorative, and almost indestructible quality was an inherent attribute of the thing's form of organization, and pertained to some paleocene cycle of invertebrate evolution utterly beyond our powers of speculation.

At first all that Lake found was dry, but as the heated tent produced its thawing effect, organic moisture of pungent and offensive odor was encountered toward the thing's uninjured side. It was not blood, but a thick, dark-green fluid apparently answering the same purpose. By the time Lake reached this stage all thirty-seven dogs had been brought to the still uncompleted corral near the camp, and even at that distance set up a savage barking and show of restlessness at the acrid, diffusive smell.

FAR from helping to place the strange entity, this provisional dissection merely deepened its mystery. All guesses about its external members had been correct, and on the evidence of these one could hardly hesitate to call the thing animal, but internal inspection brought up so many vegetable evidences that Lake was left hopelessly at sea. It had digestion and circulation, and eliminated waste matter through the reddish tubes of its starfish-shaped base.

Cursorily, one would say that its respiratory apparatus handled oxygen rather than carbon dioxide; and there were odd evidences of air-storage chambers and methods of shifting respiration from the external orifice to at least two other fully developed breathing systems—gills and pores.

Clearly, it was amphibian and probably adapted to long airless hibernation periods as well. Vocal organs seemed present in connection with the main respiratory system, but they presented anomalies beyond immediate solution. Articulate speech, in the sense of syllable utterance, seemed barely conceivable, but musical piping notes covering a wide range were highly probable. The muscular system was almost pre-naturally developed.

The nervous system was so complex and highly developed as to leave Lake aghast. Though excessively primitive and archaic in some respects, the thing

had a set of gangliar centers and connectives arguing the very extremes of specialized development.

Its five-lobed brain was surprisingly advanced, and there were signs of a sensory equipment, served in part through the wiry cilia of the head, involving factors alien to any other terrestrial organism. Probably it had more than five senses, so that its habits could not be predicted from any existing analogy.

It must, Lake thought, have been a creature of keen sensitiveness and delicately differentiated functions in its primal world—much like the ants and bees of to-day. It reproduced like the vegetable cryptogams, especially the peridophyta; having spore cases at the tips of the wings and evidently developing from a thallus or prothallus.

But to give it a name at this stage was mere folly. It looked like a radiate, but was clearly something more. It was partly vegetable, but had three fourths of the essentials of animal structure. That it was marine in origin, its symmetrical contour and certain other attributes clearly indicated; yet one could not be exact as to the limit of its later adaptations.

The wings, after all, held a persistent suggestion of the aerial. How it could have undergone its tremendously complex evolution on a new-born earth in time to leave prints in archæan rocks was so far beyond conception as to make Lake whimsically recall the primal myths about Great Old Ones who filtered down from the stars and concocted earth life as a joke or mistake; and the wild tales of cosmic hill things from outside told by a folklorist colleague in Miskatonic's English department.

NATURALLY, he considered the possibility of the pre-Cambrian prints having been made by a less evolved ancestor of the present specimens, but

quickly rejected this too-facile theory upon considering the advanced structural qualities of the older fossils. If anything, the later contours showed decadence rather than higher evolution.

The size of the pseudopod feet had decreased, and the whole morphology seemed coarsened and simplified. Moreover, the nerves and organs, just examined, held singular suggestions of retrogression from forms still more complex. Atrophied and vestigial parts were surprisingly prevalent. Altogether, little could be said to have been solved; and Lake fell back on mythology for a provisional name—jocosely dubbing his finds "The Elder Ones."

At about two-thirty a. m., having decided to postpone further work and get a little rest, he covered the dissected organism with a tarpaulin, emerged from the laboratory tent, and studied the intact specimens with renewed interest.

The ceaseless antarctic sun had begun to limer up their tissues a trifle, so that the head points and tubes of two or three showed signs of unfolding; but Lake did not believe there was any danger of immediate decomposition in the almost subzero air. He did, however, move all the undissected specimens closer together and throw a spare tent over them in order to keep off the direct solar rays. That would also help to keep their possible scent away from the dogs, whose hostile unrest was really becoming a problem, even at their substantial distance and behind the higher and higher snow walls, which an increased quota of the men were hastening to raise around their quarters.

He had to weight down the corners of the tent cloth with heavy blocks of snow to hold it in place amidst the rising gale, for the titan mountains seemed about to deliver some gravely severe blasts. Early apprehensions about sudden antarctic winds were

revived, and under Atwood's supervision precautions were taken to bank the tents, new dog corral, and crude aeroplane shelters with snow, on the mountainward side. These latter shelters, begun with hard snow blocks during odd moments, were by no means as high as they should have been; and Lake finally detached all hands from other tasks to work on them.

It was after four when Lake at last prepared to sign off and advised us all to share the rest period his outfit would take when the shelter walls were a little higher. He held some friendly chat with Pabodie over the ether, and repeated his praise of the really marvelous drills that had helped him make his discovery. Atwood also sent greetings and praises.

I gave Lake a warm word of congratulation, owning up that he was right about the western trip, and we all agreed to get in touch by wireless at ten in the morning. If the gale was then over, Lake would send a plane for the party at my base. Just before retiring I dispatched a final message to the *Arkham*, with instructions about toning down the day's news for the outside world, since the full details seemed radical enough to rouse a wave of incredulity until further substantiated.

III.

NONE OF US, I imagine, slept very heavily or continuously that morning. Both the excitement of Lake's discovery and the mounting fury of the wind were against such a thing. So savage was the blast even where we were, that we could not help wondering how much worse it was at Lake's camp, directly under the vast unknown peaks that bred and delivered it.

McTighe was awake at ten o'clock and tried to get Lake on the wireless, as agreed, but some electrical condition in the disturbed air to the westward

seemed to prevent communication. We did, however, get the *Arkham*, and Douglas told me that he had likewise been vainly trying to reach Lake. He had not known about the wind, for very little was blowing at McMurdo Sound, despite its persistent rage where we were.

Throughout the day we all listened anxiously and tried to get Lake at intervals, but invariably without results. About noon a positive frenzy of wind stampeded out of the west, causing us to fear for the safety of our camp; but it eventually died down, with only a moderate relapse at two p. m.

After three o'clock it was very quiet, and we redoubled our efforts to get Lake. Reflecting that he had four planes, each provided with an excellent short-wave outfit, we could not imagine any ordinary accident capable of crippling all his wireless equipment at once. Nevertheless, the stony silence continued, and when we thought of the delirious force the wind must have had in his locality we could not help making the most direful conjectures.

By six o'clock our fears had become intense and definite, and after a wireless consultation with Douglas and Thorfinnssen I resolved to take steps toward investigation. The fifth aeroplane, which we had left at the McMurdo Sound supply cache with Sherman and two sailors, was in good shape and ready for instant use, and it seemed that the very emergency for which it had been saved was now upon us.

I got Sherman by wireless and ordered him to join me with the plane and the two sailors at the southern base as quickly as possible, the air conditions being apparently highly favorable. We then talked over the personnel of the coming investigation party, and decided that we would include all hands, together with the sledge and dogs which I had kept with me. Even so great a

load would not be too much for one of the huge planes built to our special orders for heavy machinery transportation. At intervals I still tried to reach Lake with the wireless, but all to no purpose.

Sherman, with the sailors Gunnarsson and Larsen, took off at seven thirty; and reported a quiet flight from several points on the wing. They arrived at our base at midnight, and all hands at once discussed the next move. It was risky business sailing over the antarctic in a single aeroplane without any line of bases, but no one drew back from what seemed like the plainest necessity. We turned in at two o'clock for a brief rest after some preliminary loading of the plane, but were up again in four hours to finish the loading and packing.

At seven fifteen a. m., January 25th, we started northwestward under McTighe's pilotage with ten men, seven dogs, a sledge, a fuel and food supply, and other items including the plane's wireless outfit. The atmosphere was clear, fairly quiet, and relatively mild in temperature, and we anticipated very little trouble in reaching the latitude and longitude designated by Lake as the site of his camp. Our apprehensions were over what we might find, or fail to find, at the end of our journey, for silence continued to answer all calls dispatched to the camp.

EVERY INCIDENT of that four-and-a-half-hour flight is burned into my recollection because of its crucial position in my life. It marked my loss, at the age of fifty-four, of all that peace and balance which the normal mind possesses through its accustomed conception of external nature and nature's laws.

Thenceforward the ten of us—but the student Danforth and myself above all others—were to face a hideously amplified world of lurking horrors

which nothing can erase from our emotions, and which we would refrain from sharing with mankind in general if we could. The newspapers have printed the bulletins we sent from the moving plane, telling of our nonstop course, our two batties with treacherous upper-air gales, our glimpse of the broken surface where Lake had sunk his mid-journey shaft three days before, and our sight of a group of those strange fluffy snow cylinders noted by Amundsen and Byrd as rolling in the wind across the endless leagues of frozen plateau.

There came a point, though, when our sensations could not be conveyed in any words the press would understand, and a later point when we had to adopt an actual rule of strict censorship.

The sailor Larsen was first to spy the jagged line of witchlike cones and pinnacles ahead, and his shouts sent every one to the windows of the great cabined plane. Despite our speed, they were very slow in gaining prominence; hence we knew that they must be infinitely far off, and visible only because of their abnormal height.

Little by little, however, they rose grimly into the western sky; allowing us to distinguish various bare, bleak, blackish summits, and to catch the curious sense of phantasy which they inspired as seen in the reddish antarctic light against the provocative background of iridescent ice-dust clouds.

In the whole spectacle there was a persistent, pervasive hint of stupendous secrecy and potential revelation. It was as if these stark, nightmare spires marked the pylons of a frightful gateway into forbidden spheres of dream, and complex gulfs of remote time, space, and ultradimensionality. I could not help feeling that they were evil things—mountains of madness whose farther slopes looked out over some accursed ultimate abyss.

That seething, half-luminous cloud background held ineffable suggestions of a vague, ethereal beyondness far more than terrestrially spatial, and gave appalling reminders of the utter remoteness, separateness, desolation, and æon-long death of this untrodden and unfathomed austral world.

It was young Danforth who drew our notice to the curious regularities of the higher mountain sky line—regularities like clinging fragments of perfect cubes, which Lake had mentioned in his messages, and which indeed justified his comparison with the dreamlike suggestions of primordial temple ruins, on cloudy Asian mountaintops so subtly and strangely painted by Roerich.

There was indeed something hauntingly Roerichlike about this whole unearthly continent of mountainous mystery. I had felt it in October when we first caught sight of Victoria Land, and I felt it afresh now. I felt, too, another wave of uneasy consciousness of archæan mythical resemblances, of how disturbingly this lethal realm corresponded to the evilly famed plateau of Leng in the primal writings.

Mythologists have placed Leng in Central Asia, but the racial memory of man—or of his predecessors—is long, and it may well be that certain tales have come down from lands and mountains and temples of horror earlier than Asia and earlier than any human world we know.

A few daring mystics have hinted at a pre-Pleistocene origin for the fragmentary Pnakotic Manuscripts, and have suggested that the devotees of Tsathoggua were as alien to mankind as Tsathoggua itself.

Leng, wherever in space or time it might brood, was not a region I would care to be in or near, nor did I relish the proximity of a world that had ever

bred such ambiguous and archæan monstrosities as those Lake had just mentioned. At the moment I felt sorry that I had ever read the abhorred *Necronomicon*, or talked so much with that unpleasantly erudite folklorist Wilmarth at the university.

THIS MOOD undoubtedly served to aggravate my reaction to the bizarre mirage which burst upon us from the increasingly opalescent zenith as we drew near the mountains and began to make out the cumulative undulations of the foothills. I had seen dozens of polar mirages during the preceding weeks, some of them quite as uncanny and fantastically vivid as the present sample, but this one had a wholly novel and obscure quality of menacing symbolism, and I shuddered as the seething labyrinth of fabulous walls and towers and minarets loomed out of the troubled ice vapors above our heads.

The effect was that of a Cyclopean city of no architecture known to man or to human imagination, with vast aggregations of night-black masonry embodying monstrous perversions of geometrical laws. There were truncated cones, sometimes terraced or fluted, surmounted by tall cylindrical shafts here and there bulbously enlarged and often capped with tiers of thinnish scalloped disks, and strange, beetling, tablelike constructions suggesting piles of multitudinous rectangular slabs or circular plates or five-pointed stars with each one overlapping the one beneath.

There were composite cones and pyramids either alone or surmounting cylinders or cubes or flatter truncated cones and pyramids, and occasional needlelike spires in curious clusters of five.

All of these febrile structures seemed knit together by tubular bridges crossing from one to the other at various

dizzy heights, and the implied scale of the whole was terrifying and oppressive in its sheer giganticism.

The general type of mirage was not unlike some of the wilder forms observed and drawn by the arctic whaler Scoresby in 1820, but at this time and place, with those dark, unknown mountain peaks soaring stupendously ahead, that anomalous elder-world discovery in our minds, and the pall of probable disaster enveloping the greater part of our expedition, we all seemed to find in it a taint of latent malignity and infinitely evil portent.

I was glad when the mirage began to break up, though in the process the various nightmare turrets and cones assumed distorted, temporary forms of even vaster hideousness. As the whole illusion dissolved to churning opalescence, we began to look earthward again, and saw that our journey's end was not far off.

The unknown mountains ahead rose dizzily up like a fearsome rampart of giants, their curious regularities showing with startling clearness even without a field glass. We were over the lowest foothills now, and could see amidst the snow, ice, and bare patches of their main plateau a couple of darkish spots which we took to be Lake's camp and boring.

The higher foothills shot up between five and six miles away, forming a range almost distinct from the terrifying line of more than Himalayan peaks beyond them. At length Ropes—the student who had relieved McTighe at the controls—began to head downward toward the left-hand dark spot whose size marked it as the camp. As he did so, McTighe sent out the last uncensored wireless message the world was to receive from our expedition.

Every one, of course, has read the brief and unsatisfying bulletins of the rest of our antarctic sojourn.

Some hours after our landing we sent a guarded report of the tragedy we found, and reluctantly announced the wiping out of the whole Lake party by the frightful wind of the preceding day, or of the night before that. There were eleven known dead, young Gedney was missing.

People pardoned our hazy lack of details through realization of the shock the sad event must have caused us, and believed us when we explained that the mangling action of the wind had rendered all eleven bodies unsuitable for transportation outside.

Indeed, I flatter myself that even in the midst of our distress, utter bewilderment, and soul-clutching horror, we scarcely went beyond the truth in any specific instance. The tremendous significance lies in what we dared not tell; what I would not tell now but for the need of warning others off from nameless terrors.

IT IS A FACT that the wind had wrought dreadful havoc. Whether all could have lived through it, even without the other thing, is gravely open to doubt. The storm, with its fury of madly driven ice particles, must have been beyond anything our expedition had encountered before.

One *aéroplane* shelter—all, it seems, had been left in a far too flimsy and inadequate state—was nearly pulverized; and the derrick at the distant boring was entirely shaken to pieces.

The exposed metal of the grounded planes and drilling machinery was bruised into a high polish, and two of the small tents were flattened despite their snow banking. Wooden surfaces left out in the blast were pitted and denuded of paint, and all signs of tracks in the snow were completely obliterated.

It is also true that we found none of the archæan biological objects in a

condition to take outside as a whole. We did gather some minerals from a vast, tumbled pile, including several of the greenish soapstone fragments whose odd five-pointed rounding and faint patterns of grouped dots caused so many doubtful comparisons, and some fossil bones, among which were the most typical of the curiously injured specimens.

None of the dogs survived, their hurriedly built snow inclosure near the camp being almost wholly destroyed. The wind may have done that, though the greater breakage, on the side next the camp, which was not the windward one, suggests an outward leap or break of the frantic beasts themselves.

All three sledges were gone, and we have tried to explain that the wind may have blown them off into the unknown. The drill and ice-melting machinery at the boring were too badly damaged to warrant salvage, so we used them to choke up that subtly disturbing gateway to the past which Lake had blasted.

We likewise left at the camp the two most shaken up of the planes; since our surviving party had only four real pilots—Sherman, Danforth, McTighe, and Ropes—in all, with Danforth in a poor nervous shape to navigate. We brought back all the books, scientific equipment, and other incidentals we could find, though much was rather unaccountably blown away. Spare tents and furs were either missing or badly out of condition.

It was approximately four p. m., after wide plane cruising had forced us to give Gedney up for lost, that we sent our guarded message to the *Arkham* for relaying; and I think we did well to keep it as calm and noncommittal as we succeeded in doing.

The most we said about agitation concerned our dogs, whose frantic uneasiness near the biological specimens was to be expected from poor Lake's

accounts. We did not mention, I think, their display of the same uneasiness when sniffing around the queer greenish soapstones and certain other objects in the disordered region—objects including scientific instruments, aeroplanes, and machinery, both at the camp and at the boring, whose parts had been loosened, moved, or otherwise tampered with by winds that must have harbored singular curiosity and investigativeness.

About the fourteen biological specimens we were pardonably indefinite. We said that the only ones we discovered were damaged, but that enough was left of them to prove Lake's description wholly and impressively accurate. It was hard work keeping our personal emotions out of this matter—and we did not mention numbers or say exactly how we had found those which we did find. We had by that time agreed not to transmit anything suggesting madness on the part of Lake's men, and it surely looked like madness to find six imperfect monstrosities carefully buried upright in nine-foot snow graves under five-pointed mounds punched over with groups of dots in patterns exactly like those on the queer greenish soapstones dug up from Mesozoic or Tertiary times. The eight perfect specimens mentioned by Lake seemed to have been completely blown away.

WE WERE CAREFUL, too, about the public's general peace of mind; hence Danforth and I said little about that frightful trip over the mountains the next day. It was the fact that only a radically lightened plane could possibly cross a range of such height which mercifully limited that scouting tour to the two of us.

On our return at one a. m., Danforth was close to hysterics, but kept an admirably stiff upper lip. It took no persuasion to make him promise not to show our sketches and the other things

we brought away in our pockets, not to say anything more to the others than what we had agreed to relay outside, and to hide our camera films for private development later on; so that part of my present story will be as new to Pabodie, McTighe, Ropes, Sherman, and the rest as it will be to that world in general. Indeed—Danforth is closer mouthed than I: for he saw, or thinks he saw, one thing he will not tell even me.

As all know, our report included a tale of a hard ascent—a confirmation of Lake's opinion that the great peaks are of archæan slate and other very primal crumpled strata unchanged since at least middle Comanchian time, a conventional comment on the regularity of the clinging cube and rampart formations, a decision that the cave mouths indicate dissolved calcareous veins, a conjecture that certain slopes and passes would permit of the scaling and crossing of the entire range by seasoned mountaineers, and a remark that the mysterious other side holds a lofty and immense superplateau as ancient and unchanging as the mountains themselves—twenty thousand feet in elevation, with grotesque rock formations protruding through a thin glacial layer and with low gradual foothills between the general plateau surface and the sheer precipices of the highest peaks.

This body of data is in every respect true so far as it goes, and it completely satisfied the men at the camp. We laid our absence of sixteen hours—a longer time than our announced flying, landing, reconnoitering, and rock-collecting program called for—to a long mythical spell of adverse wind conditions, and told truly of our landing on the farther foothills.

Fortunately our tale sounded realistic and prosaic enough not to tempt any of the others into emulating our flight. Had any tried to do that, I would have

used every ounce of my persuasion to stop them—and I do not know what Danforth would have done.

While we were gone, Pabodie, Sherman, Ropes, McTighe, and Williamson had worked like beavers over Lake's two best planes, fitting them again for use, despite the altogether unaccountable juggling of their operative mechanism.

We decided to load all the planes the next morning and start back for our old base as soon as possible. Even though indirect, that was the safest way to work toward McMurdo Sound; for a straight-line flight across the most utterly unknown stretches of the æon-dead continent would involve many additional hazards.

Further exploration was hardly feasible in view of our tragic decimation and the ruin of our drilling machinery. The doubts and horrors around us—which we did not reveal—made us wish only to escape from this austral world of desolation and brooding madness as swiftly as we could.

AS the public knows, our return to the world was accomplished without further disasters. All planes reached the old base on the evening of the next day—January 27th—after a swift non-stop flight; and on the 28th we made McMurdo Sound in two laps, the one pause being very brief, and occasioned by a faulty rudder, in the furious wind over the ice shelf after we had cleared the great plateau.

In five days more, the *Arkham* and *Miskatonic*, with all hands and equipment on board, were shaking clear of the thickening field ice and working up Ross Sea, with the mocking mountains of Victoria Land looming westward against a troubled antarctic sky and twisting the wind's wails into a wide-ranged musical piping which chilled my soul to the quick.

Less than a fortnight later we left

the last hint of polar land behind us and thanked heaven that we were clear of a haunted, accursed realm where life and death, space and time, have made black and blasphemous alliances in the unknown epochs since matter first writhed and swam on the planet's scarce-cooled crust.

Since our return we have all constantly worked to discourage antarctic exploration, and have kept certain doubts and guesses to ourselves with splendid unity and faithfulness. Even young Danforth, with his nervous breakdown, has not flinched or babbled to his doctors.

Indeed, as I have said, there is one thing he thinks he alone saw which he will not tell even me, though I think it would help his psychological state if he would consent to do so. It might explain and relieve much, though perhaps the thing was no more than the delusive aftermath of an earlier shock. That is the impression I gather after those rare, irresponsible moments when he whispers disjointed things to me—things which he repudiates vehemently as soon as he gets a grip on himself again.

It will be hard work deterring others from the great white south, and some of our efforts may directly harm our

cause by drawing inquiring notice. We might have known from the first that human curiosity is undying, and that the results we announced would be enough to spur others ahead on the same age-long pursuit of the unknown.

Lake's reports of those biological monstrosities had aroused naturalists and palæontologists to the highest pitch, though we were sensible enough not to show the detached parts we had taken from the actual buried specimens, or our photographs of those specimens as they were found. We also refrained from showing the more puzzling of the scarred bones and greenish soapstones; while Danforth and I have closely guarded the pictures we took or drew on the superplateau across the range, and the crumpled things we smoothed, studied in terror, and brought away in our pockets.

But now that Starkweather-Moore party is organizing, and with a thoroughness far beyond anything our outfit attempted—if not dissuaded, they will get to the innermost nucleus of the antarctic and melt and bore till they bring up that which we know may end the world. So I must break through all reticences at last—even about that ultimate, nameless thing beyond the mountains of madness.

To be Continued.

*You're bucking
the odds*



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AST-2



*Morris lay on the table
— thinking — thinking
— of just two things.*

The Seeing Blindness

by J. Earle Wycoff

SLEEP was impossible. And yet he felt weary, as though with the age of centuries. His eyes were hot coals in their sockets; the impotent lids became grained and coarse as he blinked them uselessly over his aching eyeballs.

AST-3

Again and again he went over, in his mind, the events leading up to what he felt was the final catastrophe. They were useless thoughts—good only to send whirling in a dazzling circle, that this misery of light might be filled with

something, that there might be some basis for time—for sanity——

"I HAVE devoted my life," said Dr. Merton to the young man seated opposite him, "to a study of eyes. Not merely the human eye, for its vision is much more limited than that of many animals and birds—and in other cases more powerful——"

"Yes. I know. Professor Hardin told me what you had done, and what you wanted." The youth leaned forward, and there was a spark of impatience in his dark eyes.

Dr. Merton smiled. "You are impatient, I see. Well, so am I, for that matter. The next few hours will tell whether I am to be dubbed a fool, or praised as a genius."

"But I thought——"

"No one is certain of anything, until it has been tried." The doctor turned, and going to a cupboard at one side of his office, opened the door and took from the top shelf a small, square, green bottle. It was almost filled with a shadowy liquid that glimmered strangely through the sides of the bottle as the light fell upon it.

Merton turned to the other and ran his hand nervously through his bristly gray hair. "Here is the result of my life's work, Morris. You know its purpose?"

Morris nodded his dark head quickly. "Yes. He said you called it 'light drops'—that it enabled one to see through things. It's like the X ray, I suppose."

"Hardin should not have been so positive! But never mind. It is like the X ray, perhaps, but much more wonderful, I hope. For after this solution has taken effect in your eyes, you will be able to see through things, as you put it, but see them in their natural color! Think of being able to watch the organs of the body function naturally, with no outside influences affecting them in any way. Can't you see what it would mean

in diagnosis, in operations, in setting fractures? Its possibilities are unlimited!" The doctor's blue eyes flashed with youthful enthusiasm.

Morris leaned forward, intensely. "How soon——"

"I am ready whenever you are. To make sure that there is no misunderstanding, you will sign this paper, releasing me from all responsibility in case of mishap; and I will give you this check for \$5,000."

The youth took the paper and scribbled his name hastily. "I'm willing to take a chance. I need the money, and besides, to be able to see everything!"

"I am sure you need not be afraid. Also, I am sure from my experiments on animals, that normal sight will return within twenty-four hours, leaving no bad effects. But, of course, rabbits can't talk—that's why I cannot be sure how it works—or that it does work." The doctor had assumed his lecture voice again.

"I'm ready. Let's go!"

"There's just one thing more. You must answer as promptly as you can, any questions I ask you while your eyes are under the effect of the light drops; and also tell me any other sensations you have. A great deal depends upon this experiment, and I want it to be as detailed and complete as possible." The doctor was serious and grave.

"Yes, sir. Anything you say!" Morris was clearly impatient to get started.

"Very well. Just take off your coat and lie down on the examination table, here."

Morris followed the doctor's orders, while Merton filled a dropper from the square, green bottle.

RALPH MORRIS lay on the operating table, thinking of just two things while the doctor bent over him, with the solution ready. What couldn't he do with \$5,000! He would be the first man to have X ray eyes!

The drops smarted his eyes a little, and he blinked the lids.

"Just close your eyes for a while," the doctor told him. "You might leave them closed until I tell you to open them!"

He did as the doctor requested. Presently it seemed as if there was a grayness growing before him—a sort of hazy, gray dusk.

"It's starting to work," he told Merton. "Everything's sort of gray. It's getting lighter, too."

"Good! Keep your eyes closed for just a moment more. Undoubtedly, when you open them, the solution will have taken full effect. Perhaps you will be able to see into the next room!"

Morris wondered what room was next to the laboratory. Some of his experiences might prove most interesting!

"It's much lighter, doctor. Shall I open my eyes, now?"

"Yes—I think so—now!"

Morris raised his eyelids and looked strangely about.

"Can—can you see—me?" Dr. Merton's voice was hoarse with excitement.

"Why, no. I can't." Morris's face held a puzzled expression. "And everything is getting lighter. It's almost white. It's hurting my eyes!" He turned perplexedly toward the doctor, who was standing in front of a west window, through which the afternoon sunlight was streaming.

Suddenly he clapped his hands over his eyes and screamed: "The sun! My Lord! The sun—and I can't shut it out!"

The doctor grasped Morris' arm and whirled him away from the window. Morris stood there, shuddering and staring blankly at the wall before him.

"Everything's white, doctor," he shouted after a pause. Shouted, as though afraid Merton, unseen, could not hear him. "It's blinding. The sun, just then, before you turned me away, was like a knife stuck in my eyes. I can

see a whole lot of lights in front of me now, a long way off. They're just points of light. And I can't shut them out. Even my arm over my eyes doesn't shut them out!"

"There are lights in front of you, now? You're sure they're not just spots, from your looking at the sun?"

"But if I turn my head I see lights, too—different ones. And then, when I look back, these are always here, just the same!"

The doctor was puzzled. "I can't understand. I had always thought—" and then he suddenly paled, and sweat broke out on his forehead in huge, cold drops.

"Tell me! You can see nothing? No matter in which direction you turn? Can you see no shadows even?"

"There's nothing—nothing but lights—and the sun—and that awful whiteness that's all around me. Just as though I were in the middle of a glaring white ocean!"

Dr. Merton walked unsteadily toward a chair and sat down, heavily. He spoke more to himself, than to Morris. "All for nothing! Dear Lord! All my life for nothing!" his voice rose in a frenzy.

Morris turned to the place from which the doctor's voice seemed to come. "What do you mean? Isn't it going to work?" He was bewildered. "Why do I see the sun, if it won't work?"

"It's working! That's the trouble. Oh, what a fool I've been, all these years, never to think of it!"

"What are you talking about? Can't you do anything? I can't stand this light much longer!"

"I don't know. I don't know." There was an agony of doubt and disappointment in the doctor's voice.

"Well, if—"

"The—the animals I used in my experiments, as I said, seemed to regain their normal sight in about twenty-four hours—a day—"

"Don't you have an—an antidote or something?"

"No—there's nothing. Nothing but time."

"Maybe if you put some more of the stuff in my eyes, it would work like it's supposed to." Morris became openly cynical, thinking the experiment was a failure.

"It's working—it is working! Didn't you hear me, fool?" The doctor's voice rose again. "You can see through things! You can see through everything! That's why you can't see anything!"

"But I—I don't understand."

"Listen! You thought—I thought—that you would be able to see, perhaps, through the wall of this room into the room beyond, just as though no wall separated them. Your sight would penetrate the wall, therefore, it would be invisible to you. What we didn't stop to think of, was this: If we can see through a wall, why should you not be able to see through what was beyond that wall. If one thing was invisible, everything would be invisible!"

"But the sun? And these lights? Why——"

"You can see nothing that reflects light. That is the effect the solution has on your eyes. But you can see points that radiate light. That's why you see the sun. And the others are probably lights in factories and office buildings down in the city!"

THE NEXT HOURS were the longest of Morris' twenty-two years. All around him was that white, endless, timeless void. Night was worse, for the street lamps flared on, and it was impossible for him to turn away from them. They were on all sides.

And the sun, as the earth turned and darkness fell upon the laboratory, did

not disappear, but moved below him, glaring up from beneath his feet, through an invisible earth—blinding! It was ghastly, weird.

He felt that his brain could not stand it, and he screamed and pounded the wall. And, strangely enough, he was calmed by the feel of the heavy, solid surface.

He passed, finally, into sort of a—not sleep, not a hypnotic trance—but something, somewhere between the two. How long he sat this way, seeing nothing, yet feeling as though he were, himself, a part of the vast, white nothingness that surrounded him, he knew not.

He sensed Dr. Merton pacing the room, muttering to himself. He knew—and yet he did not actually remember—the doctor standing in front of him, pulling up his eyelids, asking him questions to which he gave instantly forgotten answers.

It seemed an eternity. And it was broken only when he realized that the whiteness was not so glaring, that gradually, so gradually he had been unaware of its changing, it had become a pale-gray.

Even as he snapped back into full consciousness, the gray became more of a twilight—a dusk that cooled his eyes and calmed his nerves into a peace he had thought he could never feel again.

And, presently, through the dusk that shifted and changed before his eyes, he could make out the form of Dr. Merton, standing before his laboratory table, emptying into a small incinerator the contents of a small, green, square bottle. The liquid contents hissed up into a purple-tinged steam as they dripped onto the heated metal.

There was a look in the doctor's eyes, as of a man who has sacrificed his only child.



*Could it be that his body, as well
as his mind, was changing into
that of a —*

Buried Moon by Raymond Z. GALLUN

TOD CRAM knew that a change had come over him. Once, an indefinite time ago, he had found his surroundings terrifying to a degree that human consciousness could scarcely bear. Now he felt a curious kinship with them. It was not merely

that he had become accustomed to his environment. The adjustment was more grotesque, and more disquietingly subtle than ever. He wondered, without alarm, whether he had gone insane.

The texture of the stuff on which he sprawled was silky and adhesive, like

cobwebs. Something hairy and black and hideous scampered across his bare legs; but he remained, for the most part, untroubled. Tom Cram could not rid himself of the odd impression that he was at home, and among friends.

There was a dull ache in his head. His whole body burned with a fevered heat that somehow deadened the sting of the countless minute wounds that dotted his naked flesh. He stirred, and he knew by the cramped stiffness in his bones that he had been asleep. For a reason which he could not quite fathom, it seemed strange to him that sleep should be possible here.

With a feeble movement he propped his head on his doubled forearms, and studied the place which had become his domicile. It was just as it had been before. The cavern was crudely circular, and had evidently been excavated from the rusty, meteoric rock by artificial means.

The roof was very low—only a yard above his head as he lay prone. It bore countless tiny tool marks. A great rough-hewn pillar, at the center of the chamber a dozen feet away, supported it. Heaps of a flaky mineral, doubtless containing small quantities of a radioactive substance, were arranged above the floor. They shed a ghastly, blue-gray phosphorescence, which was the only light in this buried grotto. Here and there odd plants had found root.

Tod Cram was conscious of that unrest, though it was inconsistent with the puzzling calm that pervaded his aching brain and body. His eyes, rheumy and bloodshot in his cadaverous face, directed their questing gaze along the walls. He saw scores of tunnel mouths, many times too small to be entered by a man. In the shadowed depths of each, a cluster of eight reddish sparks glittered like hidden rubies.

He knew that those gleaming specks of witch fire were other eyes, meeting

his own stare watchfully, each cluster of them betraying the presence of an entity that possessed reasoning powers comparable with those of a man, but whose form and habits were utterly revolting by human standards.

That was the nucleus of Tod Cram's unrest—he was among creatures whose presence should arouse nothing but revulsion and hatred in a human being; still he was at peace with them. Nor did he care what had happened, or what might still happen to himself. It was a strange situation, hinting at dark sciences beyond his comprehension. His mind had, for some reason, become unnaturally sluggish, so that he could not think clearly; yet he was still able to perceive in this strange attitude toward the inhabitants of this place, a danger that he might do things which, under other circumstances, he would regret.

In an effort to get a clearer view of things, Tod continued his visual investigations. None of the dominant species was in view now, for nothing but the glowing eyes of the watchers could be seen. Only an occasional slave creature, hairy, black, and many-legged, formed like its masters, but possessing little more than marvelous instinct to direct it in its complicated duties, scurried across the cavern. Tod Cram felt no interest in such momentary visitations.

He looked at the blurred shadows, and at the trickling dew on the rough stone about him. His attention came to rest on the blunt-nosed mechanism lodged in the wall of the cavern with half its length protruding. It was the vehicle, the drill, which had brought him to this place. Sight of it reminded his sluggish memory where he was.

This was an underworld, buried between the bed of the South Pacific two miles above, and the eternal fires of Earth, not such a great distance below. Somewhere to the west, a mile, perhaps, reared the half-submerged mountain whose summit was Sunset Island.

WHAT WAS Sunset Island to him? Tod Cram's brows puckered with unnatural effort. Oh, yes! It was the island to which he had come to conduct certain researches. Close to its shores was a great underwater crater the possible origin of which had aroused so many weird speculations among scientists. With him on the venture had been kindly old Travers and Sandra. Sandra—whose beauty was like a golden flame, whom he had loved, and whom he had learned to hate——

Travers and he had assembled the drill on Sunset Island. They had tested its great rotating fangs, looking for possible flaws and weaknesses in the superhardened steel. They had inspected the huge chemical power plant, which would drive those fangs. They had speculated upon the dangers to be encountered in the venture, and they had hoped for the best.

Then he, Tod Cram, had entered the pilot compartment of the drill. Lying prone in its narrow, reeking interior, he had guided the fantastic vehicle down through the rocks of Sunset Island.

Ejecting broken rubble in its wake, the machine had bored its way deep into the Earth, and out under the ocean bed. All had gone well until it had struck a lode of hard, meteoric alloy. The drill had continued to make progress there, but soon the drive shaft had become warped by the terrific strain. It had been evident that in a few minutes it would refuse to turn. Then the drill had burst its way through the wall of this cavern. Crippled as it now was, it could never make the journey back to the surface unless it was repaired. He had been trying to fix it—he and his friends.

Tod Cram cursed, and shook his head violently, as if to jar his thoughts into a clearer semblance of coherence. The inhabitants of this region, his friends?

The idea was persistent. Tod had only a blurred inkling of the reason

why. It concerned an eerie mechanism which stood inside a crystal cage set against the great stone pillar. Except for its indefinable aura of un-Earthliness there was nothing very striking about it. Still, as he examined the thing now, it aroused in him a vague fear, stronger, but of the same quality as the fear provoked by a half-remembered nightmare.

"Nothing but a shaft, a flywheel, and a lot of fancy gadgets!" he muttered in bewilderment.

His description of the device was quite accurate. Its metal framework, which was perhaps ten inches high, supported a slender spindle, or shaft, in a vertical position. Attached to the bottom of the spindle, after the fashion of a flywheel, was a heavy metal disk. At the upper end of the shaft, a large, many-faceted crystal was mounted. Metal points, supported by rods attached to the framework of the machine, flanked one side of the crystal in a concave arrangement, suggestive of the reflecting mirror of a searchlight. Wires, fine as hair, ran out of a large black sphere, which must have contained some cryptic power supply, and connected with the rods that upheld the points. Projecting from one side of the sphere was a pair of horizontal plates, between which was a space of perhaps three inches.

Inactive now, the machine looked quite harmless, but groping back through the fog of a strangely clouded memory, Tod Cram could recall times when it had been in motion.

He remembered his arrival here. He remembered seeing the swarming hordes of the inhabitants, through a vision port in the drill. Presently they had dragged something heavy into the cavern. A queer compulsion had caused him to open his vehicle to admit them. They had rushed over him in a black wave. Their sharp claws had begun to cut his clothing from him. Their fangs

had jabbed into his flesh to taste his blood. He had blundered wildly out of the drill. He had fainted.

WHEN consciousness had returned to him, he had seen the machine in operation. Impelled by some unknown force, the flywheel and spindle had been rotating. The great crystal at the spindle's top had been spinning before Tod's eyes. A rich, golden glow had burned in it—a glow which had somehow penetrated into his brain, bringing him illusions of peace and comfort. He had felt an alien personality dominating his thoughts and emotions, even his point of view. There had been the beginning of the strange sense of kinship between himself and the inhabitants of this buried realm. And he had often been under the influence of that penetrating, compelling glow.

It had caused dim visions, like echoes of a forgotten lore, to swarm inside his mind. Yet he had not been quite able to grasp those visions, for they had been too faint to perceive. Even now, though he had experienced them many times, they were still not quite within reach, though they had grown clearer.

A great purpose lay back of them, he knew—an aspiration toward freedom from this prison world of tunnels and caverns beneath the sea. And he, Tod Cram, had been helping in the fulfillment of that aspiration. While under the spell of the golden rays from the spinning crystal, he had drawn diagrams on a silky fabric his friends had brought, endeavoring to show them how to make a new drive shaft for the drill. He had not been doing this for selfish motives, but for them, his people.

That odd notion that he was one of them was still with him. All at once he grasped its significance, and saw how it had been brought about. Through the medium of the machine of the whirling crystal, they had planted the idea in his mind for their own purposes!

He looked down at his arms, scrutinizing them minutely. They were scrawny, cadaverous things now, though once they had been massive and powerful. Tod Cram was aware that sickness and near starvation had emaciated them; yet another interpretation of their condition came into his head. Could it be that some weird alchemy was changing his body as well as his mind into that of a— He checked the thought, knowing that it was mad, and without foundation in fact. Still, by some bizarre mental twist, he found himself half believing it. He laughed harshly, hysterically, and without humor.

"I won't let them make me do what they want me to do," he muttered childishly. "Those devils can't force me. From now on I'm hanging onto myself!" But his words were thick and blurred, and without real conviction. His will could not sustain the rebellion for more than a few seconds.

He listened to the distant trickle of water, ominously suggestive of ever-pending catastrophe. The ocean above was seeping down through crevices in the rocks, to meet the molten interior of the Earth below. Steam, under tremendous pressure, was constantly being generated down there, making ever-present the dangers of earthquake, of flood, and of suffocation by volcanic gas. Even now Tod Cram could feel the faint vibration of distant Cyclopean forces. Yes, he would be glad when he and his people had won their way to the surface.

Memories, fogged and distant, obtruded themselves into his thoughts. Books. Experiments. The tall elms and old, gray buildings of a campus, under bright sunshine. Some one who had said that he possessed inventive ability. Old Travers who had helped him so much in his work. Old Travers who whistled through his teeth when he spoke. Sandra. Sandra, the beautiful —Mrs. Tod Cram—

He had brought her out of New York to Sunset Island. And there their love had turned bitter. His eternal tinkering and his endless speculations. Boredom. Sandra had hated it, and she had maddened him. He had beaten her once, just the day before he had left. But his thoughts of her were dim and impersonal now. For some reason he could not even picture her in his mind. Disinterested, he allowed his dazed faculties to rove on to other memories.

He thought of the vast, submerged crater close to Sunset Island; and of the fascination of its riddle, which had inspired him to build the drill. A vague hunch had proved true beyond his wildest fancies—

TOD CRAM'S rambling ruminations were brought to an abrupt end. There was a shifting of eye clusters in the tunnel mouths, where guardian entities stepped aside to admit a scurrying flood of the inhabitants. In a rush and a scramble they poured into the cavern, making a seething sound as their hairy bodies rubbed together. They were spiders, bigger than tarantulas, hideous beyond anything spawned on the upper crust of Earth; yet, in their grotesque forms, evolution, working through the ages, had implanted intellects equal to those of men, though perhaps of a somewhat different order.

The creatures swarmed over Tod Cram, burying him completely. His only protest was a ragged gasp. A few individuals of the swarm nipped at his flesh, but most of the arachnids attempted no harm. He was a valued treasure to be taken care of; for in him they saw the attainment of freedom, and perhaps a Nirvana of other flesh like his. Perhaps their impetuous rush was prompted only by a desire to touch him, that they might convince themselves that he was real.

The man received their demonstration with only the faintest traces of a

deadened revulsion. Presently the tide receded, and he saw the little stack of food which his visitors had brought him—globes of a sticky, grayish concoction, doubtless prepared especially for him by some theorizing arachnid scientist. Under other circumstances Tod Cram would have found it revolting, yet he downed it with apparent gusto, for there was nothing else.

While he was eating, a bright metal object on the floor before him caught his eye. His friends had dragged it into the cavern from some hidden workshop of theirs. It was a new drive shaft for the drill, made according to his diagrams—a stout piece of meteoric steel, two feet long. At one end was a slender-flanged cone, intended to engage the complicated clutch of the drill's motor. Its tip was needle-sharp. Tod Cram was pleased to note that the job had been accomplished so well.

Within the crystal cage beside the pillar that supported the roof of the cavern, the mechanism of psychic powers had gone into operation. The flywheel, and the spindle on which the faceted crystal was mounted, had begun to turn. Swiftly the rotation became more rapid. The golden light, provocative of visions, flared up in the spinning crystal. An arachnid nearly twice the size of its fellows, crouched between the two parallel plates projecting from the side of the black globe which was part of the machine, and stared fixedly at Tod Cram.

Once more that cloudy terror was with him—that feeling that he would do something that he did not wish to do. He tried to turn his eyes away from that weird mechanism, but they refused to respond to his commands. And after a moment he was somehow glad that he had been forced to yield. An alien science had conquered him.

He still was curious, though, how this inhuman miracle was brought

about. Was it simple hypnosis, or a combination of hypnosis with something far more subtle and penetrating? Certainly the latter, since the former could scarcely have accomplished the results he had experienced. Was the principal acting force perhaps a kind of eerie compulsion exercised through the agency of telepathic waves enormously amplified by the whirling crystal and its auxiliary apparatus? Such must be the case. The monster arachnid between the plates was thinking thoughts and directing them into Tod Cram's mind.

He could capture those thoughts more clearly now than ever before. It seemed as though a groove had been worn in his consciousness by frequent repetition of this grotesque ceremony, so that his mind was more receptive.

First of all he found himself feeling more and more that his purposes and ambitions, even his identity, were one with those of the creatures that crowded around him. It was as though he crouched now, in council, as one of them. His sympathy for his own kind was completely smothered; he even began to think of the man, Tod Cram, as an entity quite apart from himself.

Conscious realization of his present surroundings faded, until he seemed to be no longer in the cavern, but in some indefinite place far back in departed ages.

Details grew sharper and clearer; and presently it was as though he were experiencing some vivid daydream, implanted in his mind by some arachnid intellect.

HE SAW the bright stars and the black sky of airless space. A great gray-green sphere, mottled with clouds and continents and oceans, hung in the void. It was the planet Earth. Close to it, so close that it almost touched the Terrestrial atmosphere, was a tiny

moon, circling its primary at vast speed. Tod Cram thought of that moon as an ancient homeland, and he knew that it was the birthplace of the arachnid race—their moon. It was a scintillant globe, bright as a diamond, and perhaps a shade less than a mile in diameter.

He seemed to approach it closer. The surface was of rough, amorphous crystal, devoid of either atmosphere or life. The gravity of the minute satellite was far too weak to retain an external blanket of gas.

Tod Cram was puzzled for a moment; then the secret of the moon's habitability was revealed to him. The view shifted; he saw the interior beneath the glassy outer shell. Here were great bubble cavities formed in the translucent coating of the satellite, by expanding steam and gas, during a remote time of creation. Here air and water were imprisoned. Here sunlight could penetrate, supporting growing plants. And here in these labyrinths the arachnids had built their civilization through uncounted millenniums.

In a brief, chronological sequence he saw their culture, and their scientific triumphs, crude but fairly advanced.

Then he sensed the inexorable promise of calamity. The tremendous tidal drag of the Earth was tugging at the little world, slowing it in its orbit. Very soon it would tumble from space to embed itself in its mother sphere.

Cram saw preparations for a hurried exodus, to be made by a carefully selected group of colonists who would try to land on Earth, and attempt to establish the race there. Tod saw crude cannons whose muzzles were thrust up through the shell of their moon. He saw projectiles, loaded with passengers and their supplies, being made ready for the short leap to the Terrestrial atmosphere. He envisioned flares of red flame in the darkness, as the charges of gunpowder in the cannons exploded, sending the missiles on their way. Lit-

the force was necessary to tear them from the clutch of the satellite's feeble gravity. He saw the shells flash out across space, and he saw the floss parachutes unfurl from them as they struck the Earthly atmosphere, lowering them gently toward the ground—

It had been a glorious effort. But except for faint echo which Tod Cram knew about from his experience in the world of men, it had failed. There was no arachnid civilization on the surface of the Earth. There were only spiders, whose instinctive ingenuity in constructing their webs and nests, betrayed an intelligent shadow in their ancient ancestry. There had been a slip in the great plan for colonizing the Earth. No one would ever learn its nature.

However, there had been another less popular, less conspicuous attempt to escape extinction. In the satellite's core of meteoric iron, Tod Cram envisioned arachnids hollowing out chambers and passages, storing supplies, and preparing silken cradles to deaden the awful force of the shock that was to come. This plan was not as hopeful of success as the other attempt; but it took less time and effort, and many more refugees could be accommodated.

As though he were one of those grotesque adventurers of eons past, Tod Cram saw the entrance to the retreat being sealed. He saw the darkness of the vaults and tunnels, relieved only by the glow of phosphorescent fungi. And he knew that the final plunge of the doomed satellite was not far off.

HE FELT a jerking motion as the little planet wavered from its orbit and began its long fall. He sensed the rubbery thud of its collision with the atmosphere, and the souging vibration as it tore downward. The impressions ended with an abruptness that must have represented the crash. The one-time moon had ripped through the

waters of the Pacific, and had penetrated deep into its bed.

Then the telepathic impressions, coming to Tod Cram, pictured the reawakening—the heat, the thick gloom, complete except for the fading glimmer of glowing fungi—the hundreds of lifeless bodies of those who had succumbed to the concussion.

Next was the struggle to live here in the depths. The gradual waning of food supplies. The futility of efforts to escape, with the sea above. Starvation. The digging of tunnels and passages, extending out of the remains of the buried moon, and into the crust of the Earth. The discovery of the radioactive mineral that gave light, and made the growth of food plants possible here. A gradual reestablishment of the old order, constantly menaced by natural dangers—earthquake, heat, volcanic gases, and flood—and the eternal fight to ward those dangers off. Periodic attempts to tunnel to the surface and freedom, checkmated always by the seeping, dangerous waters of the ocean. Progress, scientific and intellectual. And, finally—this.

Tod Cram's controlled dream ended. But of what vestiges of humanness his mind had possessed, all seemed to have been wiped out, except a few useful memories. Among them were clear impressions of the position of Sunset Island, and of the structure of the drill. The shell of the subterranean vehicle could be sealed, so that its occupants would not be in danger from either water or poisonous vapors.

And Tod remembered the taste of human blood, not realizing that the thought had originated, not in his own brain, but in the mind of the arachnid who controlled the mechanism of the spinning crystal, and who had doubtless been among those who had tasted the vital fluid in his veins.

Awkwardly Cram lurched to his

feet, impelled by impulses not quite his own. His palms rested on the silky substance that covered the floor. The ceiling was too low for him to stand erect, and his movements were curiously unlike those of a man. Rather, they resembled those of a great, clumsy spider, seeking to use limbs and organs which it did not possess.

His blood-rimmed eyes stared searchingly about. The cavern was clearly visible to him now—the drill protruding from the wall, the hordes of his confrères, expectantly motionless, the weird mind-machine, its glowing crystal spinning crazily, sending out the mysterious waves that exercised their eerie compulsion upon him.

Tod Cram wavered toward the drive shaft that the arachnids had made. He picked it up and examined it carefully, taking special note of the flanged cone, tapered to a needle point, at one of its extremities. As far as he could tell by visual inspection, the workmanship was as good as any which a human machinist could have achieved.

He moved toward the drill, and with fumbling fingers opened the curved door on its upper surface. Weakly he swung himself inside, and groped for tools. The diameter of the torpedolike vehicle was little more than a yard, but with his head bent down he was completely hidden by its sides. Yet the compelling waves from the mind machine continued to exert their influence over him, unimpeded by shielding metal.

Tod's brain was full of plans. It would be easy to get out of here with the drill, now that a path had been broken through the surrounding lode of meteoric alloy by his previous passage. He could take maybe a hundred of his friends to the surface in one trip. Perhaps the others could contrive to construct some kind of permanent tunnel in his wake— But the first hundred colonists would be enough for a start. They could bring the mind

apparatus to the surface with them. They could build another, larger apparatus—

The first vague hint of human puzzlement returned to Tod Cram at that final thought. It made him remember that he himself was a victim of arachnid science. The spell that had been cast over him was not quite complete enough to prevent him from remembering. Still, he went on with his work. Wrenches scraped and rattled as he prepared to insert the drive shaft into place.

AND THEN, between two intersecting braces of metal beneath him, he saw a rectangle of stiff white paper. His fingers flicked it over. On the other side was a picture—his wife, Sandra, smiling calmly. He must have dropped it from the pocket of the jacket that the arachnids had torn from him. It was an old jacket which he had not worn for months before the adventure began, before there had been any serious trouble between Sandra and himself.

The vivid details of that photograph did things to Tod Cram. Since the first time that the mind machine had worked its insidious magic upon him, his wife had been a fading dream which had grown increasingly dim until, up to a moment ago, it had been completely blotted from his consciousness.

Even before this latest demonstration of arachnid psychoscience, he had been unable to visualize her in his thoughts. But now she was real before his eyes—so real that that calm and faintly mocking smile of hers made him angry. He had learned to hate that smile. But back of his hatred, now, there was a paradoxical sweetness.

Impelled by the unexpected contact with the dead past, which the picture afforded, old memories came back to Tod Cram—memories of which he had lost even the shadow. And the friendly

warmth of them awoke in him a spark of saving fear.

For a fleeting moment Tod Cram was once more a human being, for his mind had fallen out of tune with the subtle telepathic waves that impinged upon it.

The reprieve could not last long. Even now he could feel the surge of compelling power gripping his muscles, his nerves, and the very essence of his being, forcing them back toward obedience.

But during that passing flash of freedom, his mind worked with lightning rapidity. Old human loyalties were resurrected—Sandra whom he had loved, old Travers who had taught him so much. He thought of rambles along sunlit hillsides, and of gay parties he had attended, back in the States.

The States? The nations of men might cease to be if the arachnids had their way. No one could tell how far they might go with the insidious knowledge they possessed. First, Sunset Island with its few, scattered inhabitants. Then? In a few years they might rule the Earth!

Somehow, some way, he must find a means to defeat their purpose. There was only one such means open to him, and he took advantage of it without hesitation. Turning the needle-pointed cone of the drive shaft against his chest, he threw himself forward with all his might. There was a clank of metal, and the sharp point bit through his flesh and tore deep into his lungs. The pain was like an explosion of vivid fire. Blood began to flow from the wound, and a rattle came into his breathing. Darkness was closing in around him—the darkness of death. Tod Cram knew that he had accomplished his purpose.

Without him the inhabitants of this underworld could hope for no immediate escape from their prison. The drill was the product of a science alien to them. They had not the strength to

work its controls, or to crank its huge chemical motor, the enigma of whose function might have baffled even a human scientist for months. Before they could master all the intricacies of the drill, it would become rusted and useless in the damp, corrosive air, its secrets hidden from them.

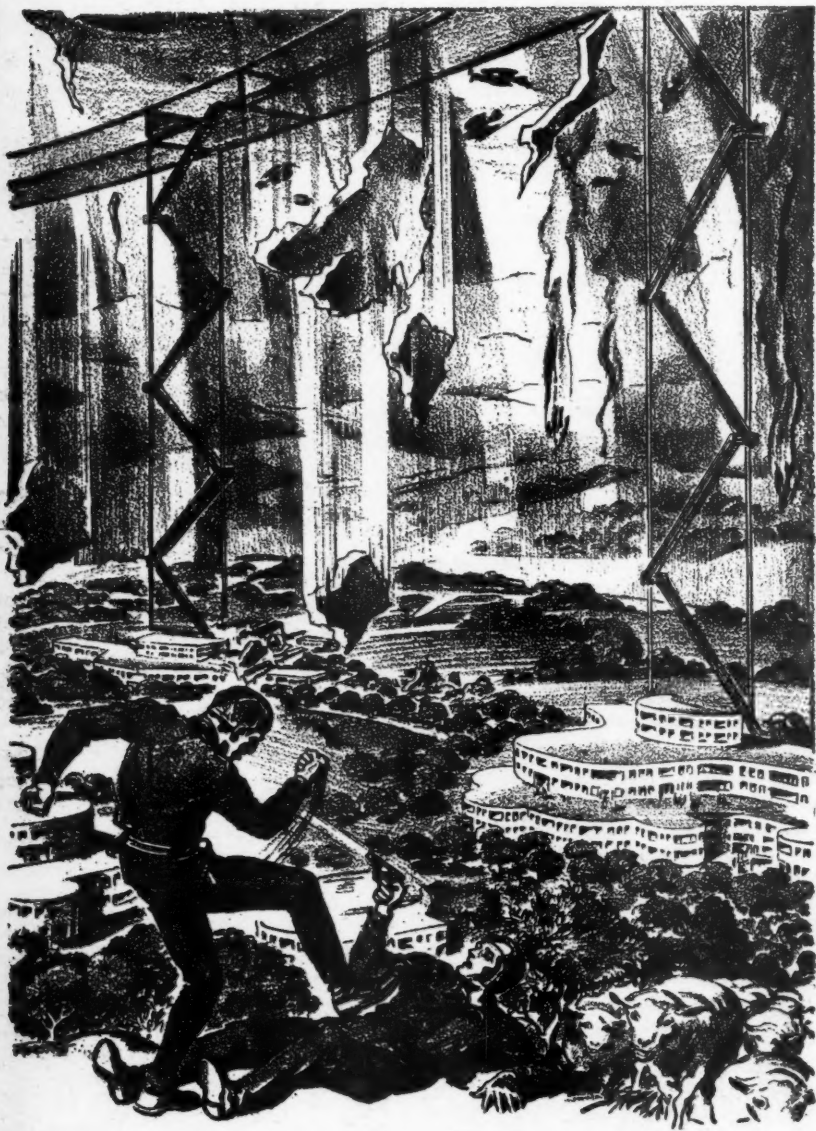
Travers probably would build another drill, and attempt to reach this place in it; but Tod Cram could do nothing to lessen the dangers the old man would face on his arrival here. Perhaps Travers would be lucky. Perhaps, remembering the disappearance of his coworker, he would take careful precautions which might save him. And even if the arachnids did capture him, it was unlikely that the frail old fellow would live long enough in this hellish place to aid them much. Tod Cram knew that he had done his best.

For a few seconds the waves from the mind machine reasserted themselves. Tod was furious at the insane impulse that had caused him to do what he had just done. Spidery bodies were running over his flesh. They were daubing his wound with a silky exudation from their spinnerets, in the hope of stanching the flow of blood. They were his friends, his *real* friends. Why had he treated them so?

The impression was fleeting. As the vital fluid in him ebbed away, Cram's mind somehow became clearer, and his view more sane.

Arachnid fangs were biting him vengefully now, because of the trick he had played. But within Tod Cram there awoke a strange new tolerance. He saw the spider folk as they really were—a fighting race, only trying to better their position, and that of their offspring, as men would do. He thought of the eternal, natural conflict of one form of life against another. Brutal, yet perhaps there was justice in it. It didn't really matter, of course. Nothing mattered— Sandra—

DEATH CLOUD



*It was a battle to the death, while death more cruel—
but just as sure—seeped in all around them—*

*A tale of a world under glass—and
under a fear which had been inherited*

by David R. Daniels

THE SKY showed poisonous green-yellow in color, and the little flier which zoomed through it, low above the Earth, was hidden now and then by sluggish wisps of cloud. The topography was dreary; it was like the wreck of a world in the process of rejuvenation.

Remains of long-dead tree trunks lay here and there, apparently half petrified, while straggling plants of strange hue were forcing their way up through them. At a little distance was a thicker growth, though it, too, was of a strange color—as though the poison of the sky had entered into these plants and changed them from the brown and sparkling green which they should be.

But there was no sign that any moving animal lived or had ever lived in this waste, except for the flier.

It was a dull color, and streamlined to the highest degree. The inclosed cabin between its stubby, back-curving wings was small, though comfortable enough for the lone human being who occupied it.

He sat tense and unmoving, his face almost hawklike as he stared straight ahead. Yet, while he flew as though all the devils in hell were upon his heels, he still had time to envy the straggling plants beneath him. If his people could endure the gas, he thought, then he would never have been flying on this mission.

For an hour he sat, his flier straining ahead with a steady, blasting roar.

Then, finally, far ahead, appeared a great dome. It was enormous; one could see that even from this distance. It seemed to be made entirely from

some transparent substance, since it gleamed like glass under the yellowish sky.

As though the flier were making one supreme effort, its roar deepened a note. It dropped low, until to Gar Nel, in the pilot seat, the ground was a hazy blur. Then, when the great sweeping curve of the dome was only a little distance ahead, the flier's speed suddenly decreased as it climbed upward, to drop in a curving sweep toward an air lock.

Had those inside recognized him, Gar Nel wondered? He hoped so, since the quicker the air lock opened, the better it would be for all of them.

They had.

Even as the flier swooped, a great section of the transparent stuff slid aside to reveal a compartment into which the ship could drop with room to spare.

Gar Nel landed, cursing the slowness with which the section overhead slid back into place, and the poisonous vapor was pumped from the lock. Finally, however, it was all accomplished, and the man leaped from the cabin.

Leaving the ship in the lock, he disappeared through a doorway leading into the interior of the dome. He was large, strong-thewed beneath the briefness of his flying togs.

INSIDE the sheltering dome all was very different. The air was clean and sweet, with the transparent roof's sweep so lofty that it seemed to take on a blueness when one looked upward. Grass and other plants of familiar green were planted so that they formed quaint designs between the occasional buildings, when one looked down on them from the height of an air-lock opening.

Animals dotted the spread; dogs, cows and horses, and even sheep were recognizable. There were people, too, though not many, it seemed. All those within range of Gar Nel's vision were looking up at him.

He waved. Some of his excitement must have been manifest, since the people beneath him hurried toward the landing of the flights of stairs down which he had started, almost at a run.

One young woman led them all—a lithe-limbed girl with a form like a Greek goddess, and a face lovelier than any goddess' ever was. She reached the platform just before Gar Nel did, and as she looked up at his strained face his anxiety was mirrored in her eyes.

"What is it?" she asked, though down inside of her she knew. "Naraval?"

He nodded. "I was barely able to get away," he said, speaking so fast that his words tumbled over each other in their efforts to escape. "A fleet left this morning, headed in this direction. I hadn't got there yet, and I turned back ahead of them. War! The only reason I beat them was because my ship wasn't so heavy. But there isn't much time; they'll be here before long. I'm going to get my guns. Tell the rest." And he turned back to ascend the stairs.

The girl ran after him, stopped him. "And you," her words showed deep concern; "what will the others say?"

"I know," he replied; "but one flier now is better than three after we can see the enemy." He searched her face. "Is something else wrong?"

She nodded, tears in her voice as she spoke. "Grandfather. He was up inspecting the ray projectors—near the ground, coming down, he slipped and fell."

"Fell! Is he badly hurt?"

"Yes; still unconscious. He may never wake up again. Oh, Gar Nel, with you leaving there's no one now —" And she threw herself, sobbing, into his arms.

He stood for a minute, unspeaking. Finally he disengaged her hands, and, lifting her chin, stepped back so he could look into her face. "There, there, Loala," he comforted softly. "It's hard; this makes it harder, but I have to go. Now smile for me, once."

Obediently she managed a wan smile, tears still glistening on her pale face. "You'll come back?" she pleaded. "Come back even if the dome's broken, and——"

"Don't!" he said huskily. "I'll come. And you wait with Rael; stay with him no matter what happens, so I'll be able to find you."

II.

A SCIENTIST of the latter-day world of the thirteenth century had first noticed the cloud in space. Though it gave no light of its own it was so close that the sun illumined it faintly.

"Hmm," he told himself, "better check that. It's right in our path, and there's something unwholesome-looking about it."

He was right. Far huger than Earth's orbit, it lay directly at a point where the moving Sun, with its retinue of planets, would sweep into it; and as the man trained his instruments upon it he found an unaccountable fear tugging at the edge of his consciousness. Even that fear, nevertheless, did not tell him just what the danger was. He thought that perhaps the cloud was a blanket of dark particles which, after entering the Solar System, would dim the Sun's light and cause a glacial age like those during the early history of Earth.

By means of his instruments he learned that the cloud was composed almost wholly of elements of the halogen group—flourine, chlorine, bromide, and iodine—with chlorine by far predominating. And this element, in its freer state, is very inimical to life as we know it.

War history for the past thousand

years had been made more horrible because of the use to which man had put chlorine gas. When breathed by animals it attacks the respiratory tract, producing symptoms similar to pneumonia.

For a time the scientist—Karvel, his name was—hesitated to tell the world of his discovery. Then others saw the cloud, and the news could not be kept a secret any longer. Besides, if the race intended to make any effort to save itself, the more time it had for preparation the better.

Speculation ran rife. Some claimed that the cloud was too thin to do any one harm—though they should have known better from the way it shut off the light of the stars behind it. Others said that the Sun's heat would disperse it and that what little of the gases did find their way into the atmosphere of the different worlds would in no sense be a menace.

But a third group, led by Karvel, was more pessimistic. "It's Armageddon," he claimed; and as time passed it began to look as though he were right.

But the gas cloud did not seem at all likely to disperse, and those who watched it found that it was quite dense. Since it was so dense, and since, before the Sun's attraction had affected it greatly, it seemed to be spinning slowly in upon itself, some scientists thought that it was in the midst of a reaction which, left unhindered, would finally have transformed it into a star. As far as general appearances went it resembled some planetary nebula very much indeed.

Most people wished that it had been left to itself, and said so; but Karvel made the most salient remark of all: "Instead of watching the chloro-cloud," he said—for thus it was called from the beginning—"we had better be getting down to business so that we can still be watching it ten years from now."

And the sect he led, for the most part
AST-4

scientists and their families, realized that the time for action was very short.

Migration was out of the question. In spite of its ingenuity, the race had never succeeded in leaving the worlds of the Sun, and there was no planet in the Solar System which would be any better off than Earth. Also, a century or two previous to this, a few covered cities had been built on the twilight region of Mercury, and while most people had never cared to live in such places, it was known that cities of the sort were not impossible on Earth. It was only a question of time.

KARVEL'S GROUP set to work immediately and with all haste. Great engines roared till the ground trembled; mighty frameworks began to rear their heads. Shell-like, transparent hemispheres half a mile high were set up, and, in the open spaces they inclosed, trees and shrubs were planted, smaller buildings erected, and the wherewithal for everything needed to sustain plant and animal life was brought together.

Queerly, the matter of pure air was one of the simplest on the list. After a little computation the engineers in charge found that the structures would be large enough to maintain their own atmospheres. In other words, since the domes would contain both animals and plants—the former using oxygen to maintain metabolism and exhaling carbon dioxide, the latter using carbon dioxide and exhaling oxygen—the air would take care of itself as does the free air of Earth. All that was needed would be a series of great fans to keep breezes circulating freely through the domes.

Another question was that of power—power not to build the domes, but to keep them habitable after they were built. There must be facilities for lighting and heating, and for numberless other things—even for the generating of the larger rays of light without

which life is impossible. Usually these rays are supplied by the Sun, but it was known that after the holocaust they would never find their way in sufficient quantities through the thicker atmosphere and through the roofs of the domes.

In most cases power was supplied by building the domes near some rushing stream, thus also making sure of a water supply. However, this was done with misgivings, since it was feared that the chloro-cloud might blanket the Sun's heat until Earth became a world of ice and snow, too; and then the streams would cease to run. But, the builders reflected, if this were the case they were doomed to failure; they might be in any event. All in all it was a heart-breaking task.

In other ways, besides the physical, difficulties encountered: no matter how ceaselessly they labored, they could never hope to build enough cities to house all the inhabitants of the world; to do so was impossible. To think of saving themselves and a few of their friends and relatives, while the other five thousand parts of the population had no outlook ahead of them except to choke and strangle and die as chlorine gradually seeped into the atmosphere—well, that was the worst.

Even the most scientifically cold-blooded of them all, those who claimed that individual lives were nothing, except as a means for furthering the race—even those felt that hard work was all that kept them from breaking under the strain.

Those who had no share in the domes went wild toward the end. All they could do was to wait while the nebula came closer, while deadly gas began to cloud the outer portions of the Solar System.

Violence, murder, and suicide became everyday occurrences in spite of the fact that a few years before that mankind had acclaimed himself, "thoroughly

civilized; even as individuals we are able to view any calamity with calmness." By the time the first traces of the halogens began to tint the upper atmosphere, half the population of the world, it is estimated, had met violent death—perhaps an even larger percentage. After that they went in myriad numbers.

Some fell back on religion, but it was a philosophy of death, not life, and dreary in the extreme. Many, for themselves, chose a quick end rather than the agony of waiting.

Since those who follow a creed usually think that other people should believe as they do, it was claimed wrong for the race to try to save itself. Innumerable prophets arose, preached various ecstasies, but, almost without exception, they claimed it the last duty of those who survived to destroy the covered cities where a remnant of the race sought to live on.

And so the final hours of the uncovered world were spent in a remorseless attempt to destroy those who had moved into the hollow hemispheres. It was a carnage inconceivable to one who has not been faced by a universal doom like that coming with the chloro-cloud.

The builders of the cities had expected something of the sort, and were prepared. All the mighty engines of destruction of that advanced age were to be used against them, so they retaliated in kind. But they did not escape unscathed. Two dozen of the domes had been built on various continents in the more tropical parts of the world; only half of these withstood the first onslaught. Those in the remaining cities fought with a fury born of a hope for life, while those against them fought only to see that every one died. Naturally, while the odds were with the attackers, they hardly threw themselves into the fray as did those of the cities.

It is likely that the only thing which finally saved six cities was the fact that at the last the halogens diffused into the

atmosphere with unexpected swiftness, so that the air became unbreathable a full forty-eight hours sooner than had been previously predicted.

III.

THE dying throes of the human race were horrible in the extreme; few of those who witnessed and survived cared to speak of that time. Karvel, who lived for a long time afterward, wrote a history of the cataclysm in his later years. But even with a score of winters to temper the awfulness of his memory, he brushed over the more unpleasant details.

He wrote in part: "The bodies lay in great heaps around Onyal—my city. Some had been torn by shells; others had died by the gas which came upon them while they slept, and morning found them still. All were not dead, since a few had slept in fliers with inclosed cabins which supplied their own air, and these had taken their craft a few thousand feet above the surface of the ground when they found the others were dying.

"It must have been blood-chilling for them to awaken in the night to find their fellows clawing at their throats and begging to be admitted. However, they could give no aid, since this would have doomed them, too.

"Since our numbers had been depleted during the battle of the previous day, we admitted such fliers as were left. Also, there were a few space ships which had gone outside the atmosphere before the doom fell. It had been their purpose to seek another planet which might be more habitable, but the dangers of space travel had been increased a thousand-fold. Only one such ship was able to return safely to Earth. I understand that Rathol admitted it—"

And of a few weeks later: "Naturally the bodies around Onyal were too numerous for us to attempt to dispose

of. The sight of them bunched here and there as our people went to and from the mine workings threw certain individuals into a state of extreme pessimism, and was, I believe, the cause of the two cases of suicide which took place during the following month. For that reason I confined my people to the dome for some time after that, knowing what effect the more gradual dying of all plant life would probably have.

"Most of us, nevertheless, did not care to die merely because the country around us was becoming barren. If that were the way of our race we would never have attained what status of progress we have managed to scramble to during the ages."

It was a dreary outlook ahead. While there are some individuals capable of living out their lives all within a few miles of their birthplace, few of these would continue contentedly were they to discover there was no place else they could live. That was the case here; and in the bustling period of the thirtieth century no one had been accustomed to looking upon a trip to the Moon or Venus as more than an easy journey.

So it irked them to be confined to the transparent domes. Of course, they could visit other such cities; they had ships powerful enough to carry them to other planets, but there was no appreciable difference between one place and another. Mars was blanketed by the chloro-cloud; so was Venus; even the Moon, which made Earth by far the most favorable world for the others had always been unsuited to human life.

THERE WAS little about the chloro-cloud which came to pass as it had been foretold, probably because every one, even Karvel, was inclined to be too optimistic. It had been thought that the Sun would attract the most of the gas, the planets coming in for small portions, especially such worlds as Earth, lying between the greater masses of Jupiter

and Sol. A few years while the hungry seas and ground drank up the gas and turned it into less volatile compounds, it was claimed—a few years more for good measure, and finally men might venture again from protection.

But that was not the case. There was so much gas that a decade after the cataclysm the air of Earth was as chlorine-permeated as ever; and then people began to give up hope. It was just as well, for there had been no change after fifty years, after a hundred. Those who ventured unprotected outside the domes went down gasping and tearing at their throats, and, unless they were aided quickly, died.

But, in the meantime, what became of the half dozen cities which housed all that remained of the once prolific races of Earth? In all, their population numbered perhaps sixty thousand men, women, and children, and a similar number of various tamed lower animals.

Theoretically there was enough to keep every one busy, and to make them forget their lot. They visited between the domes, or worked the distant mines. At intervals they went over and strengthened the domes, since what flourine there was in the outer atmosphere combined with the silicon used in the construction of the hollow hemispheres and gradually weakened the structures.

In theory there was plenty to do, but not in practice. As generations passed, apathy gradually overtook the people, so that they hardly cared what went on. One dome was left unrepaired so long that finally it cracked and fell in, and beneath it those who were not crushed to death had only a little time to wish that they had been more diligent.

Two more went to war. Living to themselves, as the inhabitants of each dome did now, a fierce patriotism was springing up, and the practice of visiting between cities was dying out. Then

came a little quarrel over a mine working, and a going over of old guns.

Two cities vanished in little more than the flicker of an eye, while a few motherless fliers darted hither and thither. Karnak finally took them in; but they carried their quarrel with them. For a few days all was tranquillity, and then Karnak went down in civil war. After that there was peace between the two remaining cities for a long time.

Onyal and Naraval knew that strife did not pay. And since they were separated by some two thousand miles of rough country—close enough to be bridged with ease by swift fliers, far enough to preclude most petty disagreement—they lived in amity.

Once each generation—there was no set date—they came together to exchange young men and women that there might not be too much inbreeding. Occasionally they communicated between these times, but only to a small extent. Those who made too frequent visits were regarded with suspicion on both sides. They had learned the dangers of being too much together, but they knew it to be as dangerous to stay altogether apart.

GAR NEL wanted to change that, for he had new ideas. Gar Nel was born in Onyal some seven hundred years after the coming of the chloro-cloud. Perhaps it was a little longer than that, perhaps not so long; time was hardly considered worth the measuring any more. He lived in the days of the decline of man, for life had become a monotonous ritual to be observed because there was nothing else to do. Routine had almost destroyed initiative.

Gar Nel was different from the other young men of his age. From the day he first opened his eyes on Onyal, he wondered at his surroundings.

"Why," he asked, when he was very young, "do we live inside this dome when there is so much ground outside?"

Plants grow out there." And they did. Nature, the immutable, had been susceptible to change, for after all plants had died from the noxious gas she cultured types capable of living in the gas. Now there were strange-hued trees and shrubs growing in favorable places, and they were spreading because they had no natural enemies. And some folks said they had seen a few insects, though most were not certain that anything moving could stand the gas.

Now the young man knew why his kind stuck to the protection of the domes, but still it bothered him. Yet of all the odd two thousand who now inhabited Onyal—their numbers had shrunk to that—he could find but two others who seemed to care.

It was not as though chlorine strangled one by its inactivity, as pure carbon dioxide, or nitrogen would. Its deadliness lay in its activity, for it attacked cell structure.

"Very possibly," the white-bearded Rael told him, "somewhere in the universe there are planets which have always had atmospheres of chlorine, as Earth's was once principally of nitrogen and oxygen. Upon such a planet types of plant and animal life might evolve very similar to that of Earth, except that they would breathe chlorine, or compounds of it.

"As an element chlorine is active enough, in most cases, to take the place of oxygen. The trouble on our planet is that it is too active for us. Because animals have evolved to breathe oxygen they die in chlorine; if the chloro-cloud had blanketed our world back in dim, prehistoric days, and stayed, men might possibly have still evolved, except that then they would look upon chlorine as one of the needed constituents of the atmosphere. Very likely one which they could not get along without."

Rael told him many such things, for Rael of the white beard was the last

scientist. He studied the workings of nature as his father had before him, and in him Gar Nel found a confident. Though Rael was by far the older; in fact he had a granddaughter very nearly the young man's age, there was much in common between the two. And the maid, Loala, only interested Gar Nel the more. She was a girl to make the pulses leap—lovely, alluring, and with a mind as keen as that of Rael.

It was to them Gar Nel told his secret wish; now that he knew men could not live outside the domes, during his lifetime, at least. But to him it was a calamity that they existed as they did—Onyal to itself, with the dome of Naraval as provincial, and the inhabitants of both growing fewer each generation.

"I would like to reawaken the old, old interest in life," he said. "It's the heritage of mankind, and all that keeps us alive now. But it's a dying interest, for there's nothing but sameness."

If he could obtain the coöperation of Naraval, he thought, if he could start a visiting between the two cities, then his end might finally be attained. New friendships would arise, new interests. Perhaps, in time, these might lead to the rebuilding of some of the destroyed domes and a new working of the mine sites; for he had far-reaching ideas.

All this he told a little hesitantly, for the others did not seem to see as he did. To his surprise Rael was in favor of the plan.

"You do your work," he said, "and I'll do mine." Yet that was all he would vouchsafe.

IV.

AS GAR NEL let himself into the air lock he was thinking back on all this, and while he struggled with the mounting of a heavy gun his mind was busy elsewhere. For he had tried and failed.

He had forgotten the inertia of the minds of his people. Theirs was an



Even as the flier swooped, a great section of the transparent stuff slid aside.

apathy built up with the dust of dead generations, and an endless living to themselves beneath the curving transparency which kept them alive.

They could still keep the fliers running, and the domes repaired, but little more. And since Naraval and Onyal distrusted each other they cherished the old weapons their ancestors had invented, though only the more simple of such machines. They had guns which fired exploding pellets, and bombs which would blow holes in the domes, were they dropped correctly upon them. But the more potent weapons had been too intricate, and were forgotten.

That was good, Gar Nel told himself, now that the worst had happened. For the Naravalians had looked upon all manifestations of friendship as an attempt to undermine them, and had grown more hostile with each visit. A few times they had accepted him, and then their anger was aroused. At Rael's request he had not ventured near the

other city for more than a month. And then, this last time, it was only to see a fleet leave the air locks and wing heavily toward Onyal, which could only mean one thing—war!

"But I'm not to blame," Gar Nel told himself fiercely, as with quick fingers he completed the mounting of his gun. And then he fell to denouncing himself, for, like all dreamers, he was sometimes not plausible. And there were Loala and her hurt grandfather helpless beneath him.

Yet those of Onyal, his own city, did not trust him. They had clustered around Loala, and now she was gone. But still a knot of them stood far beneath him. He could see them gestulating in heated discussion as one or another of them pointed in his direction.

Five finally detached themselves from the others and hurried up the stairs toward him, while the others set off for the dome guns and the other various air locks. Fools! Why hadn't they opened the one in which his flier was? One flier to slow the enemy now would be better than a dozen after the attacking force had reached the dome!

He had not a long wait, for shortly the five had reached the inner door, were opening it, coming through. He recognized them all.

This was stark foolishness! Hadn't they understood Loala?

One of them motioned for him to come out of the ship. "What's the trouble, Morvan?" he asked when he had obeyed. Then he saw that the others were closing around him, forming a guard.

"You brought the news that Naraval is attacking?" Morvan questioned, scowling.

"Yes; I saw them this morning. It's a big fleet; every flier they have, I imagine. The only reason I beat them here was because they were weighted down with weapons."

After a glance at the five sullen faces,

Gar Nel lost his temper. "Haven't you any sense at all?" he asked, his voice rising. "I've told you we're being attacked, and you just stand there. You're the best pilot, Morvan, and there's only a little time. Do something, or open the air lock so I can!"

"That's it," said Morvan. "You've already done too much."

Gar Nel's eyes narrowed. "Because I was trying to wake you up, bring you out of this sleep you're all in, you blame me——" He broke off, anger surging strong now—anger at them for their apathy, for the blame which he felt was unjust, most of all because with menace to their dome on the way they stopped to argue.

But Morvan only nodded his head. "We know you're to blame," he said. "Even if this wasn't what you planned at the start, if you had left well enough alone Naraval wouldn't be attacking now. We're going to keep you under observation; how do we know what else you might do?"

And then, to one of the others: "Take him, Ogo; don't hurt him unless he tries to escape, but don't let him get away."

Gar Nel saw the gleam of a gun in the grasp of him whom Morvan had appointed. He recognized the huge frame. It was best to go with the man, he reasoned, rather than waste any more precious time.

"We'll have your trial when the battle's over," he heard Morvan say, as he went through the inner door. "If we find you guilty, as I think we will, we'll put you outside the dome." But he made no reply.

HE WALKED slowly down the stairs, Ogo following behind. Ogo was taller than Gar Nel, even, and much heavier. A stolid, unimaginative sort, from whom he could expect no sympathy.

But did he deserve sympathy, he was

wondering, for his mind was already beginning to swing the other way. After all, wasn't Morvan right? If he had left Naraval alone, would its fliers be attacking now? Wasn't he just as guilty as though he had consciously turned traitor to Onyal, to his race?

No, he told himself, clenching his fists. It would be better if both cities were blown to ruins in one last flare, than to go the way they had been drifting—better that every man, woman, and child perished in the chloro-cloud than that they sank down slowly in a more lingering, but just as sure, end. As it had been headed, the race was doomed. He lifted his head. If only he could do something!

"Walk more slowly," came the rumble of Ogo's voice. "I'm supposed to stay close to you."

They were descending the last flight of stairs when the fliers took off. Gar Nel could hear their roar faintly, as from a distance. And almost at the same instant, from farther away, another drone impressed itself on his consciousness—the fleet from Naraval.

If the others had not wasted so much time they could have met the fleet farther out. While probably no single pilot from Naraval cared to destroy the dome of Onyal, knowing, if he did so, that some flier on the other side would break through and do the same to his own dome, men did not always act according to their better judgment during the heat of battle.

And while there were guns set up here and there along the inside of the roof to be manned by the women, these guns were not at all capable of protecting the rounded expanse from a swift flier carrying exploding bombs. It had been different in the old days of ray warfare, when their fathers had fought to carry on the race; but now the domes, by themselves, were almost defenseless. That was the main reason why Onyal and Naraval had not cared to war; it

would in all likelihood mean mutual destruction.

And what would happen to Loala?

The thought came suddenly, and he looked around to see if she were visible anywhere. Perhaps she was climbing up a winding way toward a dome gun; then he remembered that she had promised to stay with Rael, who was hurt. She was safe then, until the worst happened, and they bombed the dome.

Gar Nel made his way to a place where there was nothing to impede vision except the transparent expanse of the dome above, and here he sat down. Ogo seemed not to mind, for he said nothing. But Gar Nel saw he was watching him covertly, his gun ready.

"Ogo," he asked, "aren't you interested in who wins?"

"Of course; but I was told to watch you and see that you did no harm."

"Ogo," he said placatingly, "you know that I don't want anything to happen to Onyal, my own city. Even if Morvan wants me inside, he would not care if we two manned a roof gun. None of the women are good shots, and they might hit our own fliers. Let the two of us find a high gun, where we can see the battle, and we may be able to help our men. Any one who can hold a gun as steadily as you do should be a good shot."

A smile appeared on the blank countenance, and for a moment Gar Nel thought that the praise would have its effect. Then a shrewd look came into the little eyes. "How do I know you wouldn't shoot our fliers?" the other asked. "No, Gar Nel, I don't trust you. If you say anything more to turn me from my duty I'll shoot you in the leg so you can't climb the stairs."

Gar Nel said nothing more.

WHILE the dome was exceedingly transparent, considering its thickness, the more clouded air on the outer side hindered observation. The two men

on the ground could see the fleets meet, a mile away, like black flies. They looked small and insignificant, but each of them, the captive reflected, was capable of destroying the domes of Naraval and Onyal, and thus dooming the human race. He looked around.

For the first time he realized distinctly just what it would be to have the great roof crack and shatter, to have pieces of it fall, letting the poison vapor drift in from the outside. And Loala was here!

"Lord!" he muttered.

Ogo looked at him queerly.

Now Gar Nel imagined that he could hear the quick staccato of firing, that he could see tiny darts of flame leap out from the fliers. It was like looking at a dim, awful play. From here he could not even tell which were which. And, if he could, what difference would it make; what help could he give, if help were needed? He buried his face in his hands.

What seemed a long time after that the excited rumble of Ogo's voice caused him to raise his head. Apparently the man had forgotten his prisoner, for his gun had dropped to his side, while his head was craned backward with jaw adrop. "Look," he was saying. "They're coming closer."

They were. Half a dozen ships were fighting almost above the dome, while the others waged battle farther away. As he looked, one of those closest to them seemed to halt in mid-air. Then it was coming in spirals toward them.

"It's going to strike," shrieked Ogo, his face ashen. "What if it's carrying bombs?"

Luckily, however, an air current rising from the rounded surface caught it, bearing it to one side. It crashed far away, out of sight of the two watchers.

It had been thinking of this time which had unstrung Gar Nel; now that it was at hand his nerves were in perfect

control. Not so the other. Lacking imagination Ogo had not pictured danger to the dome, and thus to himself, until it was directly at hand.

His heavy chin quivered; there were tears in his eyes. His hand holding the gun butt was tightening and the weapon was in danger of firing.

"Do something! Do something!" he shrieked, his voice rising eerily.

But the other had already weighed all chances. "There's nothing," he said quietly, "that we can do."

The even tenor of his words had their effect, but not in the desired fashion. They brought Ogo back to his senses, but only to realize that the man before him, at his mercy, was he whom the others blamed. Cruelty replaced the terror in his eyes.

"I'm going to shoot you, Gar Nel," he said, "and leave you here till the gas comes." He raised the gun. Moved by an impulse of revenge, he was steady again.

Gar Nel was facing him, rising to his feet from hands and knees. Suddenly his vision focused on something behind the other, above him. "Look, Ogo, look," he gasped, pointing.

It was not all ruse. Gar Nel had seen the flier which detached itself from those fighting to one side, which came sweeping toward the dome. It seemed like a wounded bird, now rising, now falling, as though its pilot could only partially control it.

"A Naravalian," he guessed. "Hurt; going to get us before he goes out."

As if in averment to his guess a shape dropped from the bottom of the flier and came hurtling down toward the roof. It was followed closely by another like it. Bombs!

Ogo looked up as the first of the missiles struck, shrieked again. The gun he held was pointed at Gar Nel, and his fingers, tightening spasmodically, pulled the trigger.

The bullet barely missed its intended victim, passing beneath his left arm as he threw himself forward. He grasped the thick wrist of the other, as the second of the bombs struck. Great cracks spread as it exploded; it seemed that the whole dome quivered. Transparent pieces of the roof began to fall, while wisps of the yellowish atmosphere crept sluggishly through the openings.

But the two fighting below and to one side were oblivious to all but each other.

V.

IT WAS a battle to the death, while death more cruel but just as sure seeped in around them. Even while he fought, Gar Nel realized the futility of it; but he had promised Loala to come to her at the end, and the other was striving to kill him.

His dive had knocked the gun from Ogo's hand, and it had fallen out of reach. Then the thick arms of the larger man went around him, pinning his own left arm helpless at his side. Joltingly, the battlers fell, Gar Nel writhing over so that he landed on top. But the apelike grasp of his opponent threatened to stop his breath, and he fought with the fury of a wild cat to break free.

Doubling his right fist, he sent it in short, biting drives against the other's face and body. Ogo gasped, doubling his short neck in an attempt to draw his face out of range of the blows which already had brought blood, for they threatened to knock him senseless. Finally able to bear the punishment no longer, he relaxed his arms.

Gar Nel scrambled out of reach, plunging for the fallen gun which he saw a little distance away. Then something struck him hard beneath his short ribs, and he doubled up, breathless. In rising, Ogo had grasped a rock, or piece of metal, which he had thrown.

Now his opponent lay on the ground, paralyzed for an instant, and summoning what speed he could, Ogo ran forward.

As in a dream, Gar Nel saw the huge form coming for him. All was pandemonium. A dozen creatures ran by, bleating hideously. He dimly recognized them as sheep.

Ogo was almost above him now, drawing back one great foot to kick the life from him. With a supreme effort, Gar Nel darted forth one hand, seized the gun, fired. The cruel expression of the face above him relaxed, was supplanted by one of sudden pain. Slowly, Ogo crumpled and went down. Far away a great piece of dome fell, crushing a little knot of buildings with a babble of sound.

As he came to his feet, Gar Nel's eyes took in the surroundings. There was little more of the dome to fall, he saw, for only a small portion of the great expanse had been damaged, and all the great girders seemed solid. However, the wrecked section was too large to repair, at least before chlorine had made the interior uninhabitable. Already it seemed that the poison was showing in the air, though he could not yet feel it biting at his nose and throat as he breathed.

The fight must have lasted longer than he had supposed, for the fliers were gone. When the dome had been ruptured, he supposed, certain of the Onyalian pilots, grief-stricken, had broken away and set out for Naraval, to repay in kind. That meant that both domes were doomed!

Gar Nel felt neither glad nor sorry; he was conscious only of being tired, and that above all he wanted to find Loala. He must! The building where she and Rael dwelt was undamaged, he saw, with sudden gladness. He made his way toward it.

LOALA was inside, by her grandfather's bed. Her eyes opened in sudden alarm when she saw him, for he was disheveled and bloody.

"I'm not hurt," he told her quickly; "but the dome's broken, and the gas is coming in. Your grandfather—how is he?"

He felt resigned and calm, but it surprised him vastly when Loala smiled. "He's conscious," she said. "He wants to speak to you."

But it was the right attitude, he reflected. They could all only die now; and if it would make the old man feel better to speak to them, why, let him. The tinge of the gas would be felt in the atmosphere before long now.

He was almost gay as he bent down over the scientist's drawn, white face. The other could not last much longer, he saw, as their eyes met.

Weakly, Rael motioned for him to lean close, and he knelt on one side of the bed, Loala opposite him.

"I can't talk much," Rael said. "Old idea; told you—something of it long—ago. Halogens, chlorine—not dangerous to cells, except attacks them. Witness plants—that have—adopted themselves to atmosphere—poisonous to—us. Cell structure—changed—grown tougher."

The old man's breath quickened, his speech died away. Gar Nel wondered at his making this effort only to speak of an old theory; then he looked across at Loala, something near to panic in his eyes. Above them the gas had been creeping down through the breaks in the roof, diffusing with the air inside. They should be beginning to cough in the first unpleasantness which would lead finally to agony and death. And yet—

Gathering sudden energy Rael raised himself, shaking loose his granddaughter's detaining hands. His dim eyes

blazed anew; his voice was steady and strong.

"Rays," he said, leaving out all but the most necessary of words, knowing that at best he could speak but little longer. "Been working on them for a long time now, as my father did. Long rays, various frequencies, between X and cosmic. Studied them in old books. Have strange affect on cell structure when properly handled. Perfected treatment; or thought I had. Tested on mice; made them able to stand gas; found the changes transmitted themselves hereditably."

Gar Nel understood now. He nodded his head to show it, to save the old man one last moment of effort. But Rael wanted to finish in his own way:

"Changed ultra-violet generators in roof; no one knew. Was intending to surprise. Fell this morning when coming down from inspection. Unconscious, didn't know about Naraval. Every one in Onyal been soaking in rays long enough. I had you stay here a month straight to complete your treatment. Gas won't hurt any of you now.

"My gift—"

Weakly, he spread his hands, his smile benign—as should be that of one who has given back the Earth to his children. Gar Nel and Loala bore him gently backward until he was once more lying at ease. Then for a long time they looked across at each other over his now still body, wonder, solemnity, and dawning happiness visible behind the tears in their eyes.

"God bless him," said Gar Nel finally.

And a little later he rose and went out to see who else had survived the falling wreckage. It was harder to see, now that the air was yellowish. But the sheep were grazing contentedly at a little distance. Suddenly he realized that everything seemed very beautiful.



Out of the vortex rose
great transparent things
which danced along the
water—

The Shapes

*What the night revealed when the
visitors from a far planet were released*

by R. DeWitt Miller

WHEN the lake was the color of polished bronze, Conway knew it would happen. That was the moment they always came, the instant before twilight when the slanting sun turned the water into a caldron of livid, flaming metal.

Just over the top of the low hills at the southern end of the lake he could see the star, a hazy point of light struggling for visibility. If they ever succeeded, it should be to-night when the star was so close; the night seemed hushed, expectantly waiting—

He pointed through the open window of the cabin.

"Watch the center of the lake," he said to the man beside him.

Professor Albert Blevins, gaunt and austere, came and stood at Conway's shoulder. His deep-set eyes glinted in the metallic glow. The flaming light gave his sallow features a synthetic appearance of health, and reddened his thin, ascetic lips.

"Conway, must we stand by this window with the wind blowing across the lake? Can't you see your mysterious shapes from somewhere else, or perhaps wait until after dinner?"

Conway jerked about. His voice was raspy, edged with hysteria.

"Blevins, you've laughed at me for fifteen years. You hounded me out of my place at the observatory."

"Don't be melodramatic. You know I had nothing to do with it. The board makes the appointments."

"The board acted because you'd already made me the laughingstock of every professor at the university. You ridiculed my books, and called me a throw-back to the days of superstition. They had to fire me."

"That's ridiculous." Blevins shrugged, his bony fingers tapping on the window sill. "Why should I do that?"

"Because you're afraid. You're afraid that if my data ever came to light, you'd be out looking for a job. You're like all the rest of the astronomers. You squelch a radical. You hide facts. You know that if the truth ever gets out, you're through—all of you."

"For a hundred years now you've been saying that the stars were separated from the Earth by many billions of miles. But they aren't. Somebody miscalculated at the beginning, and the whole damn bunch of you have been swearing to it ever since, so you won't look like fools to have swallowed it."

"I brought you here to prove that your whole system is a drunken dream."

Something's coming out of this lake that'll make you look like witch doctors."

"I still think we could see just as well with the window closed," Professor Blevins murmured.

"See, yes, but not hear. I want you to hear. I want you to hear them crying, pleading, begging to be taken home—to the lands beyond the Moon, or the valleys of Mars, or wherever they came from. Or, if I'm right, to that planet, the planet which you people claim is scorched and dead."

Conway's arm swung and pointed to the star whose tiny amber gleam showed just above the southern hills.

"It was the wailing that first brought me to this lake," he went on more calmly. "You know the Indians call this the Lake of the Crying Shadows. I knew they were some place on the Earth. For five hundred years there have been things going on that couldn't have any other interpretation."

"There were the devil's footprints in the snow for thirty miles across England. Surely you've heard of them. And the systems' cup marks in Great Britain, America, Circassia, Algeria, Palestine—all the same—the same code drilled into the rocks by some force outside the Earth. They're messages that went wrong, code flung at the Earth in the hope of reaching the lost ones."

"I've told you about the legends that center around this lake. There's the rock that's painted with Indian characters. But the thing they're trying to represent isn't of this world. It's a monstrous oblong thing with rods protruding on all sides. The archaeologists claim it was meant to be a large war canoe. They would. They'll always be trying to make explanations, until they start looking somewhere else besides on this planet."

"Then there's the story that the Indians tell about a fiery monster which lives down in the lake. They know he's there because they saw him come, a

thousand moons ago. Even you astronomers admit there might be something in that one—meteor landing in the lake. But there are more things that come out of the sky than meteors, there's——"

CONWAY'S VOICE stopped as if unseen fingers had choked it off. The wind outside had died. The flaming sky brooded over the bronze lake. In another moment sudden darkness would clap down. The stillness was complete, the last bit of sound had been sucked out of the world.

Then there came a little wisp of vibration, high, shrill, plaintive. It hesitated, stopped, began again, trilling just at the edge of audibility.

It was difficult to place the sound. It seemed to come from the center of the lake, but the water was motionless. There was a queer muffled touch that suggested some origin deep in the dead volcanic crater which the lake filled.

Gradually, as the seconds passed, the sound grew in strength. A rhythm was now clearly distinguishable: pulsing, changing in pitch, fading away to nothing, then shrilling forth in a regulated series of dots and dashes. The likeness to a code was unmistakable—a strange, complicated code, built up not only of spacing, but of modulation and pitch as well.

Louder and louder, the sound vibrated over the water. A new note was creeping into it, a human note, oddly like a woman's voice in wordless agony. It was as if the intense longing behind the strange cadence had broken through all barriers of code and language and struck straight to the brains of the men in the cabin. It was life essence talking to life essence.

Over and over it sobbed, its wail seeming to vibrate the cabin.

"I've never heard it so loud," Conway muttered. "They know. They know it's the best chance they're going to have for half a century—half a century more

down in that lake! Oh, Lord, I hope they make it."

Still the sound screamed out over the somber pines, over the water, on over the southern hills, into the depths of the approaching night, where the evening star glowed brighter.

Abruptly, the rhythm was broken. It changed to one long, indescribably plaintive note that slowly ebbed into silence.

Professor Blevins turned from the window, but Conway pulled him back.

"It isn't over yet. In a minute they'll come out of the lake to see if they've gotten through."

As he spoke, the surface of the lake was broken by expanding ripples that moved outward from the center and splashed in tiny waves on the shore.

Out of the vortex something began to rise. Great soap bubbles danced along the water, huge transparent things through which showed the pines across the lake. The last of flaming sunset touched them and made them into beautiful things of golden iridescence.

They were shapes out of the pit, not of human consciousness, opposed to the race experience of all dwellers on the Earth. There was nothing in human language to express the beauty, the lightness, the glorious freedom of those dancing shapes that moved, undulated, swayed—balls of gleaming mist, bit of conscious moonlight, pure thought made visible.

"And you really think I'll be impressed by some simple optical illusion that any decent meteorologist could explain," Blevins said harshly.

"No," Conway said quietly, "no, Blevins. Those shapes aren't of this world. They're adapted to a different type of existence. They belong in a world of pressure, terrible pressure which forced them to become pliable, nebulous, unsubstantial, so that pressure wouldn't crush them. They's why they stay down there in the lake, so the pressure of all those tons of water will

keep them from exploding. They don't dare come out for more than an instant."

Suddenly, the darkness closed in. The last glow was gone in an instant, leaving only the feeble gleams of the Moon and the stars, rapidly being blotted out by a rising mass of cloud. The wind had revived. It murmured among the pines, and whipped the lake into a mass of white caps.

In the darkness of the cabin Professor Blevins moved furtively toward the man by the window who muttered to himself: "Oh, Lord, I hope they come."

ABOVE the shriek of the wind rose another, greater sound, a mighty crashing crescendo. The interior of the cabin was illumined by a ghastly crimson glare. Professor Blevins shrank against the wall, but Conway did not turn. He stared at the lake, tossing in the stark radiance.

It struck in the center of the water, a terrific bolt of fire that rocked the Earth and churned the lake into a fury of crashing water, leaving the two men half blinded in the trembling cabin.

"They've come for them," Conway shouted over the wind. "Thank Heaven, they've come after the lost astral expedition. They'll take them home to their own lands, their own world. Five hundred years they've waited down there in that lake, hoping that some day they could leave this unfamiliar Earth where they were stranded when their power gave out, or their space ship broke down."

He stumbled across the room, and

started down the steep path that led to the water. A tall, silent figure followed him.

But, before Conway could descend to the lake, the Earth shuddered; the same unbearable light brought the pines and the hills into brilliant relief, and something shot from the seething water and into the night sky.

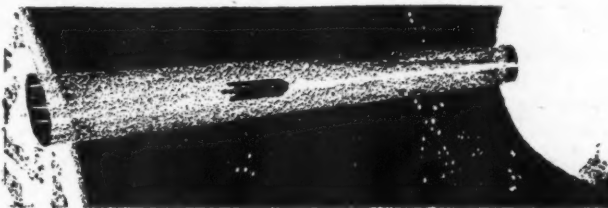
It was gone instantaneously, leaving only the suggestion of a monstrous thing, propelled by some power unknown on Earth, that had passed like a nightmare shape. That darkness was total. The moon and the stars were lost in the swiftly moving clouds. The wind tore at the men on the edge of the cliff.

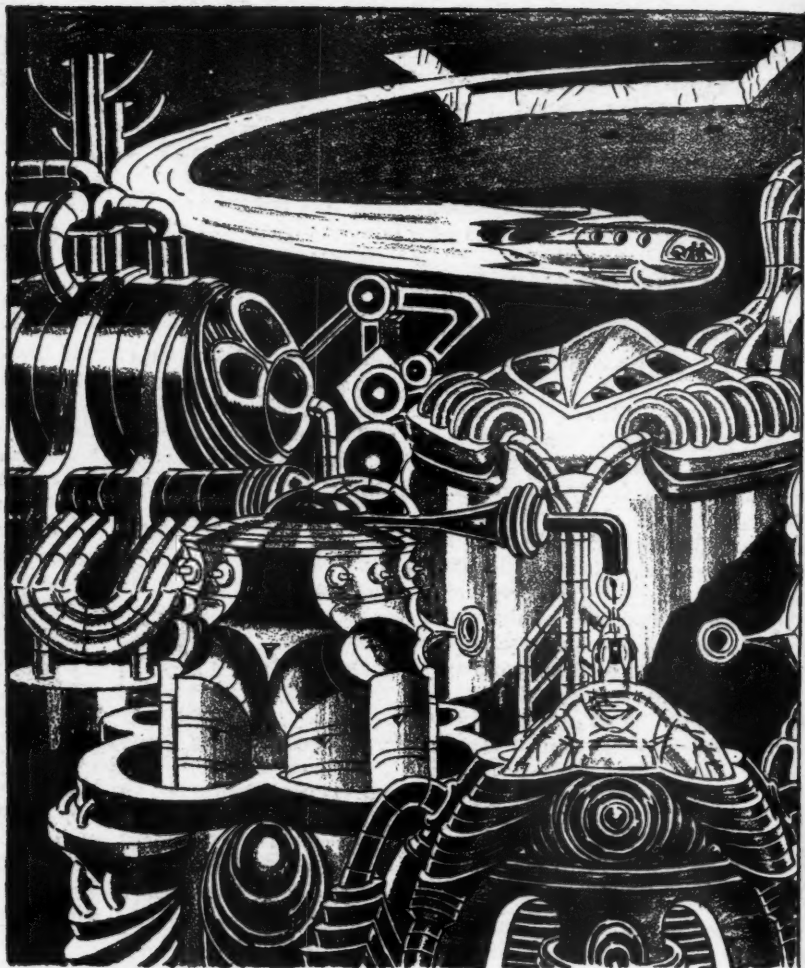
"They're gone," Conway screamed, and the wind jerked the words from his lips. "I won't have to listen to them cry any more. I won't have to hear them pleading. I won't have to think of them down there in the lake——"

He staggered. The shove was utterly unexpected. He had not even known that Blevins was there. He had no chance to turn, or regain his balance.

His body toppled over the edge of the rock wall, and hurtled down to the up-flung pinnacles of rock against which the lake battered. The churning water played a moment with the limp form, then sucked it out into the lake.

Professor Albert Blevins stood motionless on the top of the cliff, his lean frame braced against the wind. He muttered to himself in a queer, childish way: "Science has explained everything. It has rebuilt the world. Nothing must shake it, nothing——"





Mathematica

*A novel of the science
of origins*

by
**John Russell
Fearn**

I SIT DOWN to write these words in a world that has changed unrecognizably—indeed in a new world altogether; in a universe that is alien and strange and bears no relation whatever to the universe I once knew.

In the retrospect, I see now quite clearly that it was the fragment from Vulcan that started the whole amazing

AST-4



Machinery! And what machinery! Machines which had no Earthly similarity!

business and precipitated me—my name is Vernon Walsh—Dr. Farrington, and a denizen of another universe into the most remarkable experience ever meted out to thinking creatures—

To commence my story properly I must return to a scorching day in July, 1980. At that time I was an analyst in the New York Institute of Scientific Research, and a firm friend of Dr. Far-

ington's. He, by far my superior in knowledge, was directly connected with metallurgy, electricity, magnetism, and kindred subjects; hence, it was into his hands that the metal from Vulcan first came.

Space travel was first accomplished in 1975, and two years later Captain Dawson of the spaceways, at extreme risk to himself and crew, located the

formerly purely theoretical planet of Vulcan. His ship, composed of the strongest fire-resisting alloys known to the science of that time, was nevertheless badly blistered by the approach to the asteroid called Vulcan, owing to its alarming nearness to the Sun.

However, despite the danger and the overpowering drag of the orb of day, he was successful in landing on the strange little world, to find it nothing more or less than a circular mass of riveted metal. This alone was enough to suggest that the asteroid itself might be the work of intelligent beings—but so inimical to life were the conditions, that the party stayed only long enough to remove a portion of the surface with magnetizers—the merest fragment compared to the whole mass—and returned to Earth with the prize.

It was on that July in 1980 that Dawson brought the metal to my friend for examination, and as fortune—or was it misfortune?—had it, I was also present at the time.

"The stuff doesn't classify into anything I know of," Dawson remarked, lifting the lid of the stout bakelite box in which the foot-square of metal was contained. "It's some very heavy element of some kind or other—nothing on Earth like it, I believe. Have a look."

Dr. Farrington surveyed the metal thoughtfully, then he smiled.

"Well, I'll try and analyze it, anyhow," he promised. "Congratulations, Dawson. You've made up the collection now. We've fragments from all the planets except mysterious Vulcan. Now that's cleaned up we're O. K. Next time you can bring something back from the Milky Way, if you like."

Dawson ignored the banter; his face was grimly serious.

"Offhand, what would you say the metal is?" he persisted. "I want to know."

"Why so anxious?"

"Well—er—it may sound queer, but when we were on Vulcan, everything we thought about *happened!*"

Farrington's expression changed. So, I imagine, did mine.

"Happened!" he echoed blankly. "What do you mean by that?"

"Well, you know—just the ordinary run of our thoughts. For instance, while we were getting the stuff I happened to think, quite subconsciously, of my wife and kids at home. Believe it or not they materialized in the flesh right before me, then changed just as rapidly into something beyond my understanding, which finally evaporated altogether. Believe me, it scared me stiff! All my boys will testify to similar experiences. Just as though the thought became actual and then transformed itself like something alive into something—well, quite beyond my limited understanding. That's why I want to know what the metal's composed of."

"I don't wonder!" Farrington muttered, and began to stroke his chin. Had Dawson made such statements twenty years earlier he would have been deemed insane; in 1980, however, men were more prone to listen to extraordinary narratives—and analyze them. Besides, Dawson was a man of renown—steady, iron-nerved, and certainly not given to fantastic conceptions.

"Have you tried this thought-materializing stunt with this chunk?" the doctor asked presently, and Dawson vehemently shook his bullet head.

"No! It scares me, I tell you. I put it in that bakelite box to insulate it against electric waves. I've read somewhere that brain vibrations, or thoughts, are like electricity. I thought the insulation might help."

"Probably right. Still, I'm going to experiment."

Farrington reached forward into the box, then withdrew his hands sharply, gazing at blistered fingers.

"Hm-m-m—energy of sorts. No heat;

just a sort of vibratory action—friction. This gets interesting.”

He turned about and moved among the masses of his professional apparatus, finally pulling forth a small, insulated crane. With expert fingers he guided the machine so that it finally lifted the Vulcanian metal from its bakelite bed and laid it down on a sheet of two-inch-thick rubber a little distance away.

“Have a care!” Dawson warned him timorously. “Don’t think up any tigers or anything of that sort—”

He broke off, and I simultaneously let out a yell. Distinctly for a moment I beheld a vision of a tiger itself amidst the laboratory fittings. Then, even as I blankly stared, it altered its shape, transformed, became a peculiarly oblong mass of rotating stripes—and was gone. I swallowed hard.

“Astounding!” Farrington breathed, quickly moving back to the metal. “That thought of yours took instant effect. That transformation business puzzles me just a bit.”

He ceased to speak and gingerly guided the metal back into its box.

“Thought reflection,” he went on, looking down at the stuff in its case. “Most extraordinary. Like a mirror reflecting the image of oneself. But how the devil does it do it? Manifestly the stuff is electrical in some unheard-of manner, and is composed of some element having only a very vague parallel in uranium. I wonder— Can it be, perhaps, a race of beings in a universe, or on a world unknown? Strange beings of far higher intellect than ours?” He stopped and smiled ruefully. “Guess I’m getting flavored with the fantastic stories of the day. Next thing I know I’ll be thinking up some weird creature with a bulging cranium and calling him an idiotic name like Pelathon, or something of that nature.”

He slammed down the lid of the box.

FOR nearly a year, Dr. Farrington—assisted rather inadequately by me at intervals—struggled to analyze the mystic metal of Vulcan, yet he found out very little concerning it. It baffled his powers of trained reasoning; it performed feats that were at variance with all normal science. The creation of materiality out of thought was something that, not unnaturally, had him guessing. And the inevitable transformations of these literal brain children into visible mathematical and geometrical conceptions that afterward dissolved was absolutely beyond all understanding.

So, at the end of twelve months, he was little nearer. The metal was a scientific enigma, and as such was finally relegated in its bakelite case to the section perfunctorily labeled “unclassified.”

Then there came into this strange web of mystery the most remarkable visitor Earth had ever known. The occurrence happened almost a year to the day of the coming of the metal into Farrington’s hands. He was seated in the laboratory, actually discussing the metal with me, when the visitor arrived.

We first became aware of his coming by the gradual mergence out of thin air of a hazy enigma of machinery—a mass of coils, bands, wires and struts of gleaming metal that caught the sunlight streaming through the glass roof. Silent, utterly transfixed, the doctor and I watched this apparition merge slowly into our view, watched the laboratory equipment become misty and vague as the ghostly machine took on solidity and finally became perfectly material.

Before us there stood the most peculiar contrivance we’d ever seen. It was oblong in shape, not unlike a box of highly polished ebony, with the strange devices and machinery affixed to its exterior. It stood perhaps seven feet high, and remarkably enough possessed easily recognizable windows.

"What the devil——" Farrington stopped, helplessly starting forward. Then he watched as a section of the machine's wall fell away and there emerged into our presence the most fantastic personage imaginable.

In contour he bore a faint resemblance to an Earthling. He could not have been more than four feet tall, possessing a pinched and scrawny body clothed in tight-fitting scarlet fabric. Then, above this ridiculous body came a thin neck and colossal head, enormously domed and veined, with a puckered little face and beady, all-embracing eyes beneath its overhanging bone structure. I remember I vaguely wondered how he—or it—managed to keep upright at all beneath such an egregious superstructure.

For a while he stood surveying us in silence; I could feel the physical shock from his eyes. The strength of his mentality was remarkable. Then he spoke, in a voice that was curiously mellow considering his undersized lung and vocal capacity. What convinced me that I was dreaming was that he spoke in English!

"My name is Pelathon," he volunteered, revealing teeth like those of a rabbit. "As I understand it, somebody here on this world, in this universe, created me and my fellows, and my universe, roughly ten thousand millions of your years ago. I have left that universe, my own world, forever. I have journeyed through space and time—to here. There can be no mistake. My machines cannot be wrong."

"PELATHON," Farrington muttered, recovering from his first shock. "I seem to have heard that name before somewhere—— Oh, but all this is absurd!" he went on, laughing huskily. "We're seeing things, Vernon; I'm sure of it. That damned metal from Vulcan, probably. This—

er—fellow speaks English. That's impossible."

"I speak the language of the people who populate my world," the visitor replied steadily. "It was our language in the beginning, and was still our language when I set out on my astounding journey to try and prove that our world, all our universe, only came into being through the mathematical multiplication of an original thought."

"Pelathon," Farrington murmured again, ruminatively. "I'll swear I've heard it before somewhere—— I think you said something about somebody on Earth being responsible for your universe?" he asked, looking up. "How can that be? Your universe, by your own telling, died tens of thousand of years ago. Millions, I think you said."

"When dealing with time one must, of necessity, incorporate distance, size and relativity," Pelathon replied calmly. "To me—to my instruments—the time is certainly of that duration—but to you, in a different space-time continuum, it may have been but yesterday, but yesteryear——"

"A year!" Farrington interrupted suddenly, snapping his fingers. "Pelathon! Unknown universe!"

I saw his face blanch as he pursued some inner thought. Then, quite suddenly, he gripped my arm, almost hysterically. "Vernon, this fellow comes from the very universe I *thought* of more than a year ago! You remember, when Dawson first brought the metal to us, I concluded our brief investigations with a theory about the stuff perhaps being the work of some highly intelligent mind. I pursued a fantastic theory, conceived in my mind's eye a creature identical with this one, with the same name! My thoughts must have reproduced themselves by that infernal Vulcanian metal. I hadn't closed the lid of the bakelite box, if you remember——"

"I remember!" I muttered, hardly

knowing what to say. "To this man it was aeons ago—to us a year. Do you begin to realize—"

"Throughout the ages on our world we have believed the entire construction of our universe, and those of other universes, to be mental and mathematical," Pelathon commented. "We knew there must be an ultimate source for our race. In our early times we were exactly akin to you in appearance, but with the passage of ages our brains increased, naturally, until they formed us into the hypertrophied walking intellects of which I am an example. I alone, practically the last of my race, had had handed down to me, through my ancestors, the belief that all life is but thought manifestation combined with figures. I built a machine—you see it here—attuned to work on the principle of mathematical subtraction. By that means I was bound to subtract myself down to the cause of our life. I did so. I crossed space, following an arithmetical line, the ship changing itself automatically as I did so. I came from the infinitely big into the microscopically small— But my search is not yet ended."

"No?" Farrington breathed weakly. "No. You came into being as well! How? What is the reason for all this procreation and materialization of mathematics and thought? You created our universe; therefore, somebody must have created yours! We have much to discuss and discover, my friends. I have crossed time and space, and am at your service, as intent as you are on solving the reason for life being present at all. Clearly, you created my peoples and myself; our identical language is proof enough of that. We caught the mathematics of your thoughts—a strange, as yet unexplainable transfiguration took place—and there came materiality! I even got the name you thought of! Yes, we must discuss—and plan."

"But the entire thing's so amazing—unreasonable!" Farrington breathed.

"Why so?" Pelathon asked calmly.

"Well, your coming—your subtracting machine, as you call it—your obvious intelligence. It will be necessary to inform our world; we shall be plunged into an ocean of cross-questioning."

Pelathon shook his massive dome slowly. "I do not desire that, my friend. I have found you, the creator of myself and universe—to you alone I shall talk. With you alone, and your companion here, shall I experiment. Do you not realize what lies before us? Do you not realize that so far, despite my amazing journey, I have but scraped the very surface of knowledge? We must drive on to the cause of everything—to the beginning!"

II.

SO CAME Pelathon into our formerly organized lives. By a considerable amount of surreptitiousness, the doctor and I managed to smuggle him from the laboratory by night and gave him residence at my home, where, to my single manservant, matters were explained satisfactorily and an oath of secrecy placed upon him.

Here, the night after his arrival, Pelathon explained his extraordinary conception, following a day in which he had apparently spent the time making curious and complicated calculations on an immense sheet of paper.

"The more I dwell upon the problem, the more convinced I become that everything is purely one original sum in mathematics," he said slowly, looking at the doctor and me with his little eyes.

"I thought you said thought," Farrington remarked.

"Truly—but mathematics and thought are the same thing fundamentally. Surely your own scientists believe in the possibility of everything being an original mathematical thought?"

"They theorize on it, but are not at all sure of its truth."

"The theory is now substantiated," Pelathon said with assurance. "The world of Vulcan, apparently, was deliberately placed in this solar system by somebody or something to build up the thoughts of somebody equally obscure, at the moment. The metal you obtained from Vulcan was undoubtedly highly energized in some way or another and reflects your thoughts just as easily when away from the influence which lies, presumably, within Vulcan itself. I find, from my short studies to-day, that your scientists believe matter was an accident? Believe that no other planet is populated?"

"Right enough."

"Might not the latter belief be explained by the fact that the person thinking of this particular universe visualizes only *one* planet reproducing life exactly akin to his own? Therefore, no other planet possesses life?"

"That's an idea," Farrington admitted, startled. "Incidentally, several great scientists do believe—and did believe—in our universe being a mental conception. Jeans was one of them—so was Eddington. Jeans' conception was of the universe being a mathematician's thought, mainly because everything in the universe can be perfectly explained by mathematics and nothing else. He cites in one instance the conception of electrons being a system of waves in a three-dimensional space. Hence, two electrons require six-dimensional space, three electrons nine dimensions, etc., all of which is almost beyond the conception of an average brain, which again would point to pure thought and mathematics by the original conceiver. For another thing, it is never explained why one cannot annihilate a thought. Doesn't it seem likely that that is the original essence of life which nothing can change?"

"Possibly," Pelathon assented

thoughtfully. "All the manifestations of thought are inexplicable. We can think of things impossible in practicability; we can accomplish feats which material matter cannot. The more I think on it the more do I become convinced that all of it can be traced to a mathematical fundamental. Indeed, the fact that I came here by pure subtraction of figures, convinces me. In my universe, as I have said, your universe is but an atom. So, it appears the answer lies in the infinite small."

"It seems the best course would be to visit Vulcan," I commented.

"Exactly so." Pelathon nodded. "You have space travel, I observe. The heat of the Sun near Vulcan is very intense, I understand; therefore, I shall prepare a solution to cover the space ship. My solution will absorb heat radiation and create an equable temperature. Also, I shall equip the space ship with machines similar to those on my subtracting machine."

"Well?" Farrington asked.

"We do not know for certain what we may find within Vulcan. We shall take instruments to break it open and enter; I shall prepare further mathematical machines to separate the surface of the asteroid. Then, once within, we may never return."

"But why not?" I demanded.

"Because, as I have already said, the fundamental of creation lies in the infinitely, unimaginably small—lesser than the electron; lesser than the possible electrons within electrons; lesser than anything we can conceive. Just as the essence of energy lies within the atom, so I feel that the essence of creation lies within something else. If we are to pursue this something to the end of the space-time span we may never return. You understand?"

Farrington and I nodded silently.

"You are both men of science," Pelathon went on. "Are you prepared to sacrifice your liberty, perhaps your lives,

for this exploration? Remember that you will lose your own universe for all time, just as I have done with mine. I thought my journey would end here, and so far as my own universe is concerned it has. But I find myself in the midst of an even deeper problem. I'm going on, and if you love your profession you will do likewise and seek the explanation for the mystery of thought and life."

That was an invitation that took some accepting, I can tell you. For nearly two hours Farrington and I weighed the pros and cons, and at last, mainly by reason of the intense mystery that lay before us, we gave our consent—which Pelathon took with his usual immobility.

It was decided ultimately that we would set out for Vulcan, secretly, in two weeks' time. There was no reason for the world to know our object—we probably would be misunderstood, anyhow. Besides, we had to keep Pelathon's presence unknown. A man of his powers and birth was certainly too valuable to lose upon the untrained masses making up the population of the electron called Earth.

III.

THROUGH the ensuing days Farrington and I pursued our normal work—with due arrangements for a long vacation within a fortnight—and watched, upon our return to my home every evening, the progress of Pelathon with the various instruments, chemicals and ingredients we brought for him from the laboratories. His own strange machine we had also had moved over, and he had gradually dismantled it.

He was singularly reticent to explain his heat-nullifying substance. In appearance it was more like aluminium paint than anything else, but by its atomic constitution, arranged in a manner known only to Pelathon, it absorbed heat rays, dissipated a certain quantity of

them, and retained the remainder—leaving an equable, almost thermostatic temperature, no matter what heat was applied. It was certainly effective. We placed a sheet of glass, coated with the stuff, in the blast furnace, yet when we took it out it was no warmer than the glass of an oil cycle lamp.

So, as far as Pelathon manufactured the stuff from the materials at his disposal, Farrington and I, by night, sprayed it over the space machine that had been loaned to us by the authorities for our vacation. They were under the impression we were taking a much-needed holiday at Ralsingford, leading city of Mars.

Later came the assemblage of Pelathon's astounding mathematical machines, both for opening up Vulcan and subtracting us to the infinite small. I cannot explain how they worked; I freely admit it. To me the machines were an incomprehensible jumble of bars, keys, little bowls filled with ticking mechanism, rotating shafts, oil baths, and a titanic switchboard supplied with all manner of geometrical and algebraical numerals, to each of which was affixed a filigree of fine, glittering platinum wires. This effort to subtract figures from nowhere, apparently, was something best left beyond my dumb, mortal brain— Everything went without a hitch. Nobody suspected a thing.

We took off quietly on August 6, 1981, and that was the last we ever saw of the Earth known to normal man.

OUR JOURNEY was accomplished entirely without incident—save that we passed the Earth-Mars space liner on the way. Certainly we had a little difficulty in calculating the necessary figures to land us on the whirling planetoid, turning one burnished face to the dangerously near Sun. I doubt if we should have ever made it had it not been for Pelathon's almost uncanny skill. Thanks

to that we landed safely in the twilight belt. Before us, through the windows, stretched a landscape of solid metal, the bisected Sun, flaming with prominences and corona, fixed immovably at the very near horizon. Beyond doubt, Vulcan was a man-made world.

For some time Pelathon stood in silence, surveying the strange sight; then he moved to the switchboard of his subtractor. Without hesitation he moved the switches and, before our eyes, a square nearly half a mile square suddenly began to evaporate into thin emptiness and was gone, as though it had never been. There remained a black and uninviting aperture.

"Now," Pelathon murmured, "we shall see what lies within."

Farrington and I stood watching intently as the ship rose very slightly from the metal ground and began to move forward. With extreme care Pelathon guided the vessel until it reached the aperture, then began to lower it down, simultaneously switching on high-powered searchlights.

"Machinery!" Farrington ejaculated in amazement, pointing. "And *what* machinery!"

Pelathon's expression did not change. For myself, I was speechless.

Below us, at a seemingly enormous depth, couched in the gloom of that strange world, there reposed the most extraordinary, the most complicated machinery on which I had ever set eyes.

It covered the entire floor of Vulcan—or else the spherical walls. Machines which in the main had no Earthly similarity, save that a few transformers and generators were dimly suggestive. The remainder consisted of countless thousands of cables extending upward to Vulcan's sunless side, all of them leading back unerringly to one gigantic machine in the approximate center of this mechanical wilderness.

About this Cyclopean monster were grouped others, bristling with tubes,

geared wheels, obviously moving engines, shanks, well-lubricated connecting rods, enigmatic pistons—the whole similar indeed to the works of some behemoth and futuristic clock.

As we dropped lower, toward a clear space, the blurred details took on outline. We realized we were descending into no accident of a world, but into a veritable interplanetary power house, perfectly controlled—obviously remotely. We tried to conjecture where the mind was back of all this complexity, and, not unnaturally, failed completely.

"Obviously, the central machine is directly responsible for the conveyance to the asteroid's outer surface of the thought-duplicating energy," Pelathon observed, gazing fixedly through the window. "You notice, too, perhaps, a hazy aura of light—a fine, pearly mist—existing between those massive, copper pillars over there?"

"What do you think it might be?" I asked.

"Unless I'm entirely wrong it is the *cause* of this machinery. At least my figures tell me so. We'll soon find out." He turned the ship about slightly and headed straight for the mystery region.

The moment we entered it something happened. The ship jerked sharply as though it had struck a solid obstacle, to almost instantly relapse again into smooth, onward progress—yet, although our instruments revealed no decrease in speed, we showed no signs of leaving the mist. Yet, judging from our first observations, it could not possibly have been more than a mile in width!

Through the window we could dimly behold the machines that had formerly hemmed us in, yet the unusual thing was that, despite our motion forward, those to the frontward never came any nearer, nor did those behind visibly recede. The illusion presented to us was of both remaining stationary for a tremendous length of time. With every pass-

ing second we were shooting, by some unimaginable process, into an abyss of ever-widening space.

"What the devil's happening?" I demanded suddenly.

Pelathon glanced at his mathematical subtractor, which was now automatically in action. The faintest of smiles came to his wizened face.

"We are subtracting. Perhaps to call it shrinking would be more to the point. Our surroundings are becoming gigantic by proportion. We are at the beginning of a very long journey. Those immense machines, I believe, are naught but the accretment of very brilliant figuring."

"I'll believe that when I have proof," Farrington murmured. "All this concept of things being mathematical is too much for me! And yet, I must admit, it might be possible—"

"It is the only solution, I'm convinced," Pelathon replied calmly. "I shall not attempt myself to outline the mystery because my exposition may be faulty. I shall leave it until we reach that ultimate something that conceived it all. Until then we can only wait—and watch."

SO COMMENCED our journey, which took us through a period of time and space quite beyond comprehension. To correlate normal epochs with apparent very material hours was naturally beyond our mortal senses, yet Pelathon assured us that with every passing second inside the ship, thousands of years vanished into eternity in the space-time continuum in which lay the Earthly universe.

After a time the mist that hemmed us in changed into a perfect replica of our own Milky Way. We beheld solar systems by the countless scores. In some manner or other we had become free in space—or so it seemed at first to my own untrained mind.

"All we behold is purely the atomic formation of the mist," Pelathon ex-

plained. "The electrons moving round their protons like planets round the Earth's Sun— But our journey does not end here, otherwise we'd cease subtracting. As it is, we are still going on."

He was correct. The electrons and protons of the mist divided and subdivided again and again as we progressed in our amazing subtraction. The conception of Pelathon, that electrons existed within electrons, just as electrons exist inside a planet, was correct.

We passed these whirling worlds at close quarters sometimes, and despite their acknowledged speed of fifteen thousand miles a second round the proton, they seemed now, owing to our small size, to move much slower. Upon them we glimpsed no sign of life—purely barren worlds, apparently devoid of all atmosphere and water vapor, seeming to have no part in the general scheme of things.

And onward. The machines had long since melted into electrons, solar systems and nebulous hazes.

Hours on our chronometer merged into days. We took turns sleeping, Farrington and I. Pelathon never slept. Our engines had long since been switched off. Only the subtractors were at work, performing evolutions that were quite incomprehensible. All I realized was that we were within a free body which was patently lessening in size to proportions inconceivably microscopic with every second. Yet we felt there was nothing at all wrong with our bodies.

The constant succession of transformation of electrons into solar systems became almost monotonous in time.

IV.

IT HAPPENED after the formation of perhaps the seventh set of solar systems. There came no more divisions. Our ship seemed to move very slightly

and pursue a direct course for one brilliantly red world conspicuous among all the others—a world about which clung a roseate haze, issuing from the planet in the form of delicate ripples of magnificent color. Curiously enough the color bands did not lose their intensity of depth as they widened. Right until they were lost to sight in distance they retained their original strength.

"If it is a world, it is a very beautiful one," Farrington muttered, gazing down upon it and its parent sun—or nucleus would perhaps be more truthful. "For all the world like a perfect ruby set in the blackness of velvet. I wonder what it contains. Something darned unusual if those colors are any guide."

"We'll soon discover," Pelathon commented, glancing back at his subtracting machinery. "The ship is headed straight for that world, drawn to it by the immutable law of figures. Here, perhaps, we shall meet the ultimate!" And his little eyes gleamed beneath the great dome in scientific anticipation.

We remained at the observation window for a considerable time—perhaps centuries for all I know. Certainly time did advance because we eventually landed with hardly a jar on that strange and lovely world, to be immediately blanketed in the midst of that fine, carmine mist. Gravity, apparently, was almost identical to Earth's.

The subtracting machinery ceased its activity. For a moment there was dead and complete silence. Then I turned to Pelathon.

"Well?" I asked. "Do we go outside?"

He surveyed the instruments. "There's nothing to stop us walking right out," he replied. "Atmosphere composition and density is similar to Earth's; so is the gravitation, and the temperature is akin to a normally temperate day. The red mist, of course, we can't explain. If you're ready, we'll

go," he concluded, with his customary speed of decision.

Still possessing that Earth-born sense of suspicion, of preparedness, Farrington and I took rifles down from the wall—but before we could move toward the air lock, our rifles—the entire control room itself—suddenly became transparent, wavered indecisively, and vanished as completely as steam from boiling water! The three of us stood motionless, empty-handed, astounded.

About us the red mist writhed curiously as though driven by a strong wind. Then, with a speed that was staggering, it all congealed abruptly into a solidity, building with lightning changes into a very material, overpoweringly mighty city.

Around us, above us, towered invincible skyscraping buildings. My own impression was of being watched by countless thousands of gleaming windows catching the light of an unseen sun. Then, just as rapidly, the city vanished and gave place to billions of reproductions of us! We saw ourselves repeated endlessly, into an eternal distance, in one vast and incredible vista that reeled away like an unraveling film into the inconceivable remotenesses of time and space itself.

Still we stood dumb, completely overawed. I realized dimly that this was no planet, but something sentient, something intelligent, and able to juggle with time and space in a manner that was miraculous.

I was thinking in this strain when the vista of images suddenly extinguished itself, and instead, there merged into view a being somewhat similar to Pelathon, save that his head was bigger—much bigger. Indeed, its dimensions were so considerable that he wore a curious, cradlelike affair of glittering metal to support it; it was fixed firmly to his narrow, atrophied shoulders. For a long time his almost-hidden eyes



"So you came! Well, you have not reached the beginning even yet!"

watched us intently, then—either by thought waves or some other complicated form of communication—he spoke to us:

"So, you came!" he commented, rather enigmatically. And before we could even attempt an answer we were within a hall of enormous dimensions, surrounded by a multitude of scientific apparatus, with our peculiar host, if such he was, before us.

"Forgive these changes," he resumed. "Everything is, of course, purely thought allied to mathematics. You have traveled far, my friends. You have courage; you have come to seek the ultimate reason for your universe. You have found it, but even so you have not reached the very beginning even yet. I, perhaps, may show you that. My name is Si-Lafnor. I am a mathematician, a demonstrator of equations,

integrals, hyperbolas, etc. I, like you, am seeking the creator of mathematics."

"Creator of them?" asked Farrington in puzzlement. "Is there such a thing?"

"Why not? No mathematics can exist unless somebody or something conceived them in the first place. You have no record in your world, for instance, of the originator of mathematics, have you?"

"We have possible theories, lost in dim antiquity," Farrington answered.

"Quite useless—and baseless. Mathematics, life and probably thought, are all one. I knew you would come from the world of Earth; I knew, too, that the metal of Vulcan would be taken by you, Farrington, and that you, in turn, by a twist of mathematics, would create a mental birth—all unwittingly—namely of the universe of which Pelathon here is an inhabitant. Remember that only certain thoughts reacted on that metal—for instance, that of the tiger and Pelathon's universe. In other cases your thoughts had no effect, otherwise your laboratory would have been full of manifested thoughts. Those thoughts that *did* operate changed immediately into progressive mathematics—"

"But—but where are we?" I asked dazedly. "What planet are we on?"

"This planet has no name. Like any other planet it is built up of mathematics. I am the last of a race of mathematicians and, being such, am the most advanced of them all. But, before I go any further, permit me to refresh you after your journey. There! You are feeling better, are you not?"

HOW am I to begin to explain things in cold print? Even as Si-Lafnor spoke, we were immediately invigorated, as though an unknown surge of energy had passed through us. He resumed with scarcely a pause, still by that method that might have been either speech or telepathy.

"You, Pelathon, being of an advanced

race, may be able to understand what I am about to tell you. You other men may even be confused, but I will do my best to make it simple. Firstly, it is perhaps as well that you understand the mathematical concept of eternity, explainable in figures easily understandable to all of you. You are naturally aware of that elementary freak—the recurring decimal.

"In the simplest form it is obvious to you that a third of ten is three and one third; yet, if you reverse the process you get the conception of eternity. Thus, three and a third. You have never yet solved what it is. It is three plus three tenths, plus three hundredths, plus three thousandths, plus three ten thousandths, and so on until the end of time. There, my friends, lies eternity—and it also leads to the beginning, of which I will presently talk. Incidentally, my countless reflections of yourselves when you arrived here was another facet of the recurring decimal system. The city was but a figment of triple harmonic analysis.

"Now to the creation of your universe. Firstly, the conceptions of your Earthly science lean to the theory of every electron requiring a three-dimensional space to itself—hence two require six dimensions, etc. In all then, the building of dimensions attributable to all the countless millions of electrons in your universe mounts up into dimensions inconceivable. You are forced to believe, therefore, that the waves associated with dimensions are purely mathematical—which is correct. They exist in such an order of mathematics that you will never understand them. You heap confusion on yourselves by trying to understand an electron.

"To you, along with its protonic nucleus, it is the foundation of the universe—of matter itself. A clever theory, certainly. You might even try to build instruments to study electrons, only you know you're doomed to failure before

you begin. An electron in complete isolation would be unknowable. It's only when an electron is interchanging energy with some other part of the known universe that you become aware of its existence. No interchange of energy can take place that does not involve at least one quantum of atom of energy. In order to see an electron with your instruments you would have to use light; a quantum of energy would be involved and you'd so completely disturb the electron as to render it unviewable.

"So, the more and more you sink yourselves into the study of electrons, the more baffled you get, until finally some of your scientists have glimpsed the truth by pronouncing the entire universe to be mental. Then, and then only, are the paradoxes of physics solved, and the theoretical ether reduced to a mathematical abstraction. Also, you realize then that energy, the very basis of matter, becomes the constant of integration of a differential equation—just another mathematical abstraction."

"Maybe, but that hardly explains our universe," I put in.

"To arrive at that point I have to explain first your concept of it," the mathematician answered. "In truth, my friends, the ether *does* exist purely as a mathematical abstraction—that is to imply that it exists as a separate thing, a background on which to throw the calculations of other figures relating to specified objects. It is absolutely a gigantic unknown quantity—an etheric X immovably unified to the laws of figures.

"Hence you see that my own creation of a mathematical abstraction, used in conjunction with my equations, etc., totals up in finality to the creation of a material universe. Everything in your universe, you admit, can be relegated to a mathematical constant. It has dimensions, light, mass, energy, gravitation—

all relegated to figures. Humans, oceans, landscapes, everything, are purely figurative, and can be analyzed into dimensions of length, breadth and thickness.

"They move likewise in time and space, and, by the building up of more figures, create further beings like themselves. Again, take the example of the receding galaxies. The problem is easily explainable. As the figures accrue and multiply constantly the fixed basis they started from moves upwards and further away from your conceptions. In the galaxies you have the essence of figures incarnate. They are multiplying perpetually, and will do so toward an end which I cannot yet foresee."

"BY HEAVEN!" muttered Farington slowly. "I begin to see now! Just like the recurring decimal in an unthinkable advanced form. It goes on forever! That explains away all the riddles of science, explains away all flaws in figures, all materiality, everything. Purely because our mathematics are not advanced enough to understand pure figuring, the basis of life and being always evades us. Naturally, on that basis, the figures must repeat and multiply and reform into fresh conceptions constantly, which accounts for why my conception of Pelathon's universe came into being."

"Precisely that. Electrons do exist, to your minds, because they are the visible outcome of the mathematics. They are the particular basis of figures working in conjunction with the etherical abstraction which produces a total whole in the form of, to you, an electron. In all, as you have seen, there are seven sets of electrons, every one of them actually a world, but unpopulated, since in my original formula of figures I only allowed for life fairly similar to my own on one world—Earth.

"Also, there are in all ninety-two concepts from my one basis of figures,

which concurs exactly with the known ninety-two elements in your periodic table. Out of those ninety-two concepts is everything made. The metal of Vulcan came in that conception, too. It was your missing Element 87. So, out of those ninety-two concepts, of which only Element 85 still eludes you, is built up your bodies, your air, your planet—everything, resolving not into so many figures totaled on paper, but into the actual mathematical form of life, materiality and energy.

"Thought alone is apparently also mathematical, since it creates the original figures. You cannot annihilate a thought, but you can annihilate matter. All the same, here again the truth of mathematics is glaringly displayed. Destroy matter and you get energy; destroy energy and you get matter. Hence the sum total remains the same. You can never waste anything. In other words, you cannot cancel a faultless sum!"

"All that is fairly clear," I remarked. "I see now how everything Earthly and universal can be traced to your own original mathematics, but I don't see the reason for Vulcan, its machines, and the creation of Pelathon's universe."

"Surely that is simply explained, my friend. Two years ago, by my own time here, I devised the mathematics that would produce a universe—with these machines here. It was no work of mine how those mathematics would form. They arrange themselves, if properly handled. Mathematics are thoughts, remember! Hence, those mathematics produced changes in the ether abstraction and built up an entire world of machines, known to you as Vulcan.

"Vulcan came before your universe—from Vulcan's outflowing mathematics your universe was formed. In the Vulcanian machines there existed a haze wherein was the link to the original source—here. Once that universe was

formed Vulcan created again out of figures an energy duplicating the energy existing in the mind of the original conceiver—myself. Hence, thought became reproduced on that particular planetoid. Removing a fragment of that world and taking it to Earth built up another form of figures and you, Farrington, thinking of a universe, reproduced, all unwittingly, another train of constantly multiplying figures that reacted on the ether and brought Pelathon's universe into being. Again it multiplied and his race came into being. He was clever enough to subtract his way back to the source—to Earth, just as easily as you would subtract yards to inches on paper. You in turn traced the mathematical train of figures back to the start again—here.

"Indeed, you were powerless to stop doing so, because you came directly to zero. You could not have arrived anywhere else; such a procedure would have been out of alignment with figures. You saw the concept of a red world with outflowing radiations of color. That was purely a figment of my mind, relative to the particular figures I was engaged on at the moment. When you arrived here I divided your ship mathematically, gave a few figure impressions in the form of Earthly cities to impress you. The rest you know. Naturally, I knew of your coming purely by thought alone."

"And these machines? What are you seeking?" Pelathon asked. "Are you not wondering how you came into being?"

"Yes," Si-Lafnor said slowly. "I am wondering. These machines here are very similar, in a complex form, to yours, Pelathon. They subtract, add, multiply—perform arithmetical miracles. I seek the very beginning."

"And you think you can find it?" Farrington asked.

"I have been trying to do so throughout my life, just as my ancestors did before me. I have already conceived,

I think, the necessary mathematical computation to take me there. If everything goes as planned there will ultimately arrive a point when these machines will resolve the required figures into the proper answer and I will be whipped away into an essence of figures at present unknown. Then, and then only, shall I find the beginning."

"And we?" Pelathon asked quietly. "Can we not go with you?"

"I will try to arrange it. Since you have no way back you must come forward with me. To return to your own universe would mean another set of figures and the finding of a dimension which so far eludes me—the tenth dimension, one of foreshortening powers. Then I could send you back. Perhaps some day I shall find it——"

V.

OUR FUTURE was very uncertain. Being Earthly, Farrington and I could not altogether resign ourselves to the thought we would probably never return to our native planet. The very idea seemed preposterous, so to a certain extent it did not oppress us so much as might otherwise have been the case.

Mathematica, as we christened the unnamed planet, appeared to have neither night nor day—only one uniform red glow that came from a sun that was perpetually shielded by rosy mist. We passed our time, in the main, watching Si-Lafnor at work, marveling at his mathematical knowledge, against which the efforts of Pelathon were promptly relegated to the background.

While we were with this scientist there was no necessity to eat, drink or sleep; he attended to such trivial details, hence our time was occupied in watching the almost constant manifestations he built up from pure mental conceptions, resolved by his uncanny machines.

"If my calculations are correct," he observed, after one particularly long spell of work amidst the figures his instruments had built up, "the time is almost here for the transportation into the unknown realm. It would be as well for you to keep near me, ready for any event, so that we may——" He stopped.

A deep, rumbling roar smote upon our ears, gathering in intensity with the seconds. Before our eyes the colossal machinery was shifting and changing mysteriously. Bands of wavy light vibrated about the whole gargantuan mass. The air literally rippled mathematics, in a manner which I find impossible to describe.

"It is here!" Si-Lafnor exclaimed sharply. "Quickly! Join hands! We must be in contact!"

We obeyed, and stood waiting on the trembling floor. My heart was hammering violently against my side as I beheld strange, eddying mists gathering, mounting and melting in the air. I tried with my miserable brain to understand it all, and naturally failed. I could only dimly apprehend that an immense transfiguration of mathematics was taking place—a visible solution to a brilliantly planned series of figures upon an abstract background, the exact nature of which I could not even guess.

Faster and faster the giant machines raced themselves, ticking, checking, pulsating. I held on grimly to Si-Lafnor's tentaclelike hand—then, to my utter amazement, he vanished from my grip, became transparent and disappeared completely into emptiness. At the same instant the machines ceased action. The hall was as it had ever been—the uproar was over. The only difference was the absence of our host.

I glanced at Farrington, open-mouthed. Pelathon began to move thoughtfully about, stroking his immense dome. Then presently, after a

glance at the machines, he returned to us.

"The explanation is fairly simple—indeed, it could not have happened in any other way," he commented quietly. "Si-Lafnor based his mathematics on the presence of only himself. Although he knew of our coming, he obviously created his particular figurative scheme before he was aware of the fact. Hence, when the desired solution was reached—or dissolution, as the case may be—it applied only to him, whirling him away into the unknown, leaving us here to grapple with things alone."

"But how do we even start to grapple?" I asked worriedly. "We don't even know where to begin!"

"I will turn my own abilities to deriving the necessary figures to return us to our native planets—if at all possible," Pelathon answered slowly. "I have learned much from Si-Lafnor's explanations and methods. I may be able to achieve something."

"If you can, all to the good," said I. "The doctor and I are powerless to aid you. We don't understand enough."

PELATHON, however, brilliant though his mind undoubtedly was, performed only the very simplest mathematical feats compared with those of our departed host. True, he did manage to create curious machines, with the aid of the mathematical monsters hemming him in, and they in turn built up equational sequences, but in the main they were useless and conveyed no intelligible meaning.

Then again, we were faced—Farrington and I—with the problem of nourishment. We were powerless to invent anything, and Pelathon was so at sea he was unable to devise how to supply us with renewed energy. Since he had given up eating, drinking and sleeping æons before, he was perfectly in order, but Farrington and I came to the grim

conclusion that death awaited us on Mathematica unless something arrived very quickly.

But nothing did arrive. My friend and I sank lower mentally and physically as time went on, and all poor Pelathon's frantic efforts to save us resulted in absolute failure. As a consequence, my friend and I both died, rather painfully, too, as I remember, our last vision being of the distracted Pelathon figuring and computing with all the power at his command.

I repeat, paradoxical though it may sound—we died! At any rate, we both performed an astounding transition from worn-out physical Earthly bodies into another state which I can only presume was beyond death itself. We died with the thought of the beginning burning into our minds.

It was a curious sensation, that passing from bodily trammels. I died a few minutes before Farrington, yet afterward we were not separate entities, possessing new bodies, nor were we relegated to some curious babyhood on another planet.

Instead, our respective mentalities were merged into one! In this state we possessed no bodies whatever, nor had we—or should it be I?—any concept of anything save infinite blackness. Mathematica had vanished from comprehension with its equations and cumulative figures. I was in a void, a dual being, still possessing full knowledge of what had gone before, yet shut off from that state utterly and completely by unknown dimensions and spatial differences.

Perhaps this conviction of voidlike infinity lasted for millennia; perhaps only for seconds. Then, very gradually, there began to seep into my intellect, which seemed quite unimpaired—indeed highly improved—a knowledge of the amazing truth.

Death had changed the order of mathematics relative to the particular

bodies; or mathematical solutions, known as Dr. Farrington and myself. Hence we were liberated, existing as thought only, drifting on a tideless sea of intellect toward the central point, the absolute nucleus of all mental creation—where, presumably, Si-Lafnor had already gone.

The more the impression presented itself, the more convinced I felt that it was the truth. Then, after a seeming eternity, gray light began to spread athwart the blackness. My mind focused on that tiny stretch, watching it grow, increase in strength and size, until at last the blackness of infinity had changed to snow-white brilliance.

The sense of movement ceased. I had the impression of being very still. Followed a transient little jerk and a fleeting sensation of pain—then, to my dumfounded amazement, I was in possession of a body again, unclothed certainly, but nevertheless a body, of such a shape and appearance that it appalled me. I was monstrous, badly formed, like some mad and crazy caricature of an Earthling. Beside me, lying flat on a table of polished metal, was the grotesque creature whom I assumed was Dr. Farrington.

Rather to my surprise I found vocal cords; I spoke with considerable effort.

"Doctor, it is you?" I asked quickly, staring at his atrocious face.

He nodded assent, glanced down at himself, then up at the machines that were grouped overpoweringly about us. Thus his gaze moved, until it came to an astounding apparition poised within a clear space between the predominant instruments. It had no shape identical two seconds together. It was an absolute riot of conceptions—I can describe it no other way. One moment it was two-dimensional, then receded into a one-dimensional dot. Afterward it passed into a composite of eight or nine dimensions, hazy, branch arms receding into invisibility as unknown hyper-

spaces closed about it. Now it was all eyes; now all triangles—changing, warping, shifting. A mad phantasm, a paradox of space and time.

"What—what in hell's name is it?" I breathed weakly.

"I don't know," Farrington muttered. "We died all right—and we live again in these—these horrible bodies. They look as though they're thrown together!" He stopped. Involuntarily his eyes were chained to the riddle in mid-air before us.

WE ROSE to our elbows, and as we did so there appeared in front of us, blotting out the ceaselessly changing apparition, a composite series of symbols and signs, their basis obviously mathematical. Yet, despite the fact, either by reason of sharpened mentality, or else because they could only be interpreted one way, Farrington and I both read obvious words in them! I am inclined to believe, in this later stage of writing, that they were mathematics applying solely to the figures which had created our bodies, and therefore were quite understandable.

In other words, actual speaking is purely a series of vibrations in air which can be analyzed down to figures of wave length. Here we had the consummate example of the fact. I remember I had a passing surprise when I considered that I was breathing air; that gravitation was normal. Evidently we were on a world of some kind, then we—

Silently we read the messages that paraded so strangely before us.

"You are both solutions in the lowest form of mathematics. Formerly, on the world you named *Mathematica*, the particular figure-formula to which you applied had reached its ultimate solution and you could go no farther. Energy, in the terms of figures, failed you and you died—to use your own version. When those bodies ceased to exist and

your minds were liberated, you built up a fresh series of figures—albeit subconsciously—because you died with the determination to reach the beginning, and that very thought built the necessary formula, aided by the machines of Si-Lafnor, which were also trained on the conception of moving to the beginning.

"As a consequence, the figures were correct and, after the second division of your minds into separate units again the figures built themselves up upon solution into the crude, overbalanced bodies you possess now and, naturally, brought you here—since that was the original object back of it all.

"I am the original mathematician. There are no figures prior to me. I came out of a realm of supramathematics, out of a time and space beyond your conceiving; a circle that never began and that will never end—a circle of consummate perfection. That, in mathematics, is myself.

"My purpose? The creation of mathematics, which are actually thoughts. Out of those mathematics I create. I live purely by the law of figures. My object during my ageless existence is to strive toward the ultimate cancellation of *all* figures! Only by that method can I release myself from an eternity of mental and figurative toil. Everything you have seen, that you have thought, that is—is of my configuration."

"So this is the beginning!" I breathed. "And we, incredibly distant creations of your figures, gaze upon you!"

"Yes—but such a state shall not continue. I resent the solutions of my figures appearing before me to question their origin. One other came before you—one Si-Lafnor, another extremely complex series of figures which I originally built a long time ago. My purpose with him was to break him down into fresh numerical values, divide him into new computations, make of him one grand multiplicity. Unfortunately,

he had mastered the knowledge of the figures that created him and, by a brilliant process of reasoning, evolved himself into an indivisible, uncancellable sum—thereby securing safety forever! Only multiplication, division and subtraction are possible in figures. Cancellation cannot take place if the figures are built up to withstand it. It is an impossible feat. That is why the figures I originally built up perpetually increase their powers and multiply automatically.

"But with you it is different. There is nothing to prevent me breaking you up into new conceptions. I can destroy your bodies, annihilate the very figures that form your minds, those figures being of a far-advanced order."

"Which explains, I suppose, why thought cannot be annihilated by ordinary methods?" I asked quickly.

"Exactly. Thought consists of my figures. You cannot destroy thought because I am the basis. Destroy me, and you destroy the infinite and the infinitesimal simultaneously. I wish you no harm. It is purely that my existence depends upon figures. You would both make the bases of very good universes. Your solutions are admirable for the groundwork."

"Say," I muttered, glancing uneasily at Farrington, "this glorified proposition in Euclid means business!"

"Do you propose escaping? Purely by my own graciousness you have an atmosphere about you—the concept of a world—of machinery. All purely for your edification. In one second of your very simple time calculation I could change everything—fling you into extinction. Crush you into infinitesimal dust, or transform you into recurring figures that would mean an endless life of anguished computing, striving to find the way back.

"No, my friends. Si-Lafnor was clever enough with his mathematics; so much so that he found the tenth dimen-

sion, a problem which apparently had long evaded his solving. But with you it will be a simple task to transform you. After all, why not?"

VI.

THE SYMBOLS faded. Once again that changing apparition appeared before us, shifting, indeterminable—a thing of angles, figures, and uncanny trigonometry. My brain began to buzz as I tried to follow the integrals and progressions that the being worked out before us. I, who had never been accustomed to anything but fairly ordinary mathematics, was soon lost.

Farrington, though, seemed to understand a trifle more. His terrible face was strained and earnest. Then he spoke, huskily:

"Unless I'm clean wrong, Vernon, he's arrived at the point where the total of his calculations will divide the figures of which we're built up into nothing. Come on—we'll make a material dash for it!"

I needed no second invitation. We had no idea where to go, of course, but anything was better than watching doom in the form of pure figures build up before our very eyes. We slid from the flat metal table on which we'd been lying and rushed toward the door of the place. Immediately, however, a wall of metal manifested in front of us.

We fell back. Machines which moved on ponderous legs came from nowhere and traveled in our direction. Once again the symbols danced before our eyes.

"Why attempt such methods? You cannot defeat my figuring. I will soon have the solution that will cancel you for all time——"

I stopped still, shuddering involuntarily. So did Farrington. I began to feel something tearing relentlessly at my brain and body—yet nothing was visible. With a shock I realized that

the original mathematician had reached the stage where the electrons—if I can call them such—comprising the atoms of my body were being changed into fresh numerical values, thereby bringing Farrington and me to the edge of dissolution. Indeed, I think at this stage that we had no electrons in our make-up, but something else more relevant to a complicated agglomeration of advanced figures.

Then something happened. Out of the emptiness before the wall that towered before us a figure merged. My heart leaped for joy as he took on shape.

"Si-Lafnor!" I gasped hoarsely. "Thank goodness! Look, Farrington!"

"Do nothing—stand still," came Si-Lafnor's telepathic command—then he and the original mathematician, literally father and son of incredible mathematics, became absorbed in the most terrific mental battle of computation.

Though we could not see the figures that passed between them, we felt the awful force of their conflict. Our bodies were torn and racked with pain as one or other gained the mastery.

Si-Lafnor's eyes vanished under the bulging contours of his forehead. He stood completely rigid, tussling, struggling, pitting every ounce of his astounding powers against the overpowering figuring of his original computer.

Then something seemed to snap. A sense of delightful comfort suddenly stole over me. The wrenching at brain and nerve ceased. I breathed hard, recovering my strength, and, to my surprise, found that my body was no longer as large and repulsive as it had been—neither was Farrington's. We had both changed considerably.

Si-Lafnor smiled very faintly as he looked at the changing riddle that hung over us.

"It is over," he commented. "The

original can do nothing. I have transformed you, even as I did myself, into indivisible creations of figures that no mathematical power can dissolve. Not one figure will cancel. You are safe—forever."

"Correct," agreed the symbols of the original. "Si-Lafnor, you win. Not because your mathematics are necessarily cleverer than mine—that would be impossible—but because you evolved a quicker way than I to reach your solution. One day, when I finally solve the greatest problem toward which I am always struggling, you will become the first mathematician. I can do no more. You are indivisible."

"Well, what happens now?" I asked slowly. "Being indivisible is an advantage, of course, but how do we get away from here?"

"I have found many things since we arrived here at the beginning," Si-Lafnor replied slowly. "As you are already aware, I arrived at the computation of the tenth dimension, a riddle that had long puzzled me. By its aid space and time foreshorten to a fraction of their original extension. I was indeed working out further problems in the untouchable safety of the dimension when I became aware of your own presence and struggle. I came to aid you. Now I shall take you back to Mathematica. There is no reason why I cannot perform the necessary figures to transport you. I believe we will arrive and find my world only a little older. Besides—I may now be able to return you to your own world."

ONCE AGAIN he plunged into concentration, and little by little a gray and indeterminable mist began to creep about us, gathering opacity with each passing moment. Presently it infolded us completely. We held each other's hands, and waited. Si-Lafnor was presently lost to sight completely, but the slow and indisputable changes about

us were alone indication of his supreme mental efforts.

The grayness changed to black. We became aware that our bodies were floating free in absolute space, yet there was no sensation of cold. Later we learned that the change in our bodies to indivisibility had rendered us immune to all things—space-cold included. Nothing could annihilate us, unless it be some incomputable figurative system.

The blackness continued. There were no visions of stars and planets or nebulae; they seemed peculiar only to the planetary universes of which that of Earth's was but one in millions. Lower, in those intra-atomic regions we beheld no such evidences, presumably because we were beneath the microscopically small, shifting in the midst of the abstract called ether.

Gravitation, if there was any, had no effect on us either in that curious foreshortening dimension. Indeed, I am inclined to think that tenth dimension existed purely as a mental conception and was devoid of all the figures that normally make up dimensions, matter and energy.

However, whatever the causes and effects of that strange transition, we ultimately merged back into Si-Lafnor's original laboratory, there to find a fallen figure lying at the base of the mighty machines that still calculated and operated with endless precision—building, building, into goodness knows what!

"Why, it's Pelathon!" exclaimed Farrington, running forward, lifting the limp mathematician in his arms. "What's happened to him?"

Si-Lafnor advanced slowly and looked down at him. Then he shrugged his attenuated shoulders.

"He is neither dead nor alive," he pronounced. "Somehow, probably in trying to build up certain figures with these machines, he has placed himself in a state of suspended animation, which will last until I can create the neces-

sary divisibility to break the effect. Most unfortunate for him. Later, I will try to revive him. Presumably not any considerable time has elapsed since our departure. There are your own dead bodies over there, just as you left them."

Farrington and I glanced at our corpses, then turned away, oddly nauseated.

"My effort now," Si-Lafnor went on, when Pelathon had been gently laid back on the floor, "will be to return you to your space and time. I cannot return you to the actual Earth, that would be impossible—but I can return you to a world almost identical, thanks to the assistance of the tenth dimension. I will build up another series of figures identical to those that formerly created your universe, and so create another universe. During that time you will be traveling through space and time, through the tenth dimension, and will, if my figures fruitify as I expect, merge on to that world at the appropriate period.

"Also, your bodies will change from these grotesque monstrosities—brought about by haphazard subconscious figuring—into those normal to Earthlings. But remember, you are henceforth indivisible—immortal. I made you incapable of cancellation, and that can never be altered."

"And when will the return take place?" Farrington asked eagerly.

"In approximately twelve of your Earthly hours you will commence the journey. For that period please do not converse with or disturb me. I must concentrate—deeply."

VII.

THOSE LAST HOURS on Mathematica were undoubtedly the most remarkable that Earth-born men—or minds—ever spent.

Farrington and I, our natural tired-

ness revived by Si-Lafnor, stood aside and watched him work. And very amazing work it was, too! We saw the fundamentals for the creation of the second universe take place before our eyes, though how it was done confounded us both utterly.

We saw the mammoth machines responding to the mathematician's every thought.

He sat at the small control board, the droning monsters grouped about him, monsters that were literally the sheer essence of resolved conceptions. They moved; they altered; they created energies, magnetisms, formulas, angles—all manner of composite things, working their unforgettable tracteries of master equations and supramathematics on the background of endless abstract. I smiled faintly as I tried to conceive the mind motivating Si-Lafnor, as I tried to fathom the knowledge and concentration he must possess to be able to perform such feats.

Hour after Earthly hour he sat at the control board, unmoving, eyes shut for the greater part of the time, huge dome brightly lighted by the strange, all-inclusive radiation that came from a carmine mist above the titanic hall. Farrington and I could easily have wearied had it not all been so fascinating—then at last the master mind arose and turned to us.

"It is complete," he said quietly. "The figures necessary are computed, and are even now multiplying upon themselves. I have endeavored to reproduce an exact duplicate of the original conception that brought your universe into being. Naturally, while I am still myself part of figures I am not infallible—I am not pure evolved mind like the original mathematician—and for that reason I may have made trifling errors of judgment here and there, but I do not believe they will affect you. You will both move through the tenth dimension to this universe I am build-

ing and will arrive there with proper bodies."

A silence fell—then he spoke again, steadily: "Are you ready?"

Farrington and I nodded and moved to the special area beneath the machines which Si-Lafnor indicated.

For a space we stood looking at each other—we, tiny brains from an unimaginably distant world; he, the penultimate intellect of creation itself. Eyes met.

"You have seen much, and learned much," he murmured. "For your own sake, I hope you never return here. Stay in the world you will find—immortal. Through your endless lives try to learn the purpose of these figures. Use them, live with them—*understand them!* If I can revive Pelathon from his unfortunate trance I will transport him back to this world you will find—this second Earth. After that he must work his own way home. I can do no more. And now, farewell."

"Farewell," we answered simultaneously, and watched a living switch depress itself under the force of the master mind's thoughts.

Instantly grayness and gloom were upon us, darkening into abysmal night. Mathematica reeled out of our conception—

ONCE AGAIN the concept of time and space defeated all means of knowing how long our journey through the tenth dimension occupied. We only realized that a universe must be forming as we moved—that the ether outside our dimension must even then be a mass of shifting figures, multiplying, dividing, subtracting, all in perfect invisibility, working out their own inconceivable pattern.

Perhaps æons later we found ourselves suddenly upright in a world from which the gray mist had cleared. We were unclothed, yet possessed of bodies that were indeed Earthly, magnificently

proportioned—indeed far better than the bodies we had possessed before.

Above us was the vault of stars—far away in the distance hung the haze of a mysterious mass of angles, and crazy, almost four-dimensional buildings. A city that perpetually changed. Across the sky moved and pulsated strange shapes akin to cylindrical tubes that perpetually widened and contracted and, at times, became completely invisible. Once, one of these enigmas passed over us at a height of perhaps a thousand feet, and vanished in the all-embracing night. The air was warm, almost tropical. I turned to look at Farrington's handsome face.

"Well?" I asked quietly. "What sort of a city do you call that?"

"I don't know," he answered slowly, staring above him at the stars. Then very gradually he looked back at me.

"Do you know," he said, "there isn't a single known constellation in the sky! Nor is there a recognizable planet. Venus, Mars, Jupiter—all gone!"

"But what—" I was bewildered.

"We'll see what the city offers," he interposed in a firm voice, and with that we both set off across the loose soil toward that insane flamboyance in the distance. Perhaps two hours of hard walking, which did not in the least fatigue us, brought us to the cliffs overlooking the city in the valley below.

Almost like Neanderthal men gazing down on modern New York we crouched and stared—baffled, perplexed.

It was a city utterly beyond our conjectures—an unsolvable puzzle in advanced geometry and dimensions. The buildings, in the main triangular in shape, seemed to own the odd property of being able to change their appearance constantly. We could see inside them, round them, all at the same time. We beheld indescribable traffic, and people. Such people! They seemed to be a mass of transfiguring lines and bars that rotated and shifted in mid-air or else

moved with stupendous velocity. As to the strange light that hung over everything, we could not even guess at that.

"What——" Then I looked up with a violent start as something touched me on the shoulder. I jumped up in utter astonishment.

"Good night—Pelathon!" I exploded. "Pelathon! How did you get here?"

He shrugged. "An odd twist of time, I suppose, brought about I imagine by one body taking less time to travel in the tenth dimension than two. I have been here some time now—I have a cave up on the cliffs. Thought inference alone told me that you were near, and I came to find you. Needless to say, Si-Lafnor revived me from my accidentally self-inflicted suspended animation."

"But this place! This isn't anything like Earth!" I protested hoarsely.

"I know," he answered slowly. "Somewhere, even as Si-Lafnor expected, he made an error in his figuring—perhaps only one fraction—but in the aggregate total it produced something utterly unlike the world you once owned. This world, what I have seen of it, is a profound problem in dimensions. I have been studying it. Its peoples are friendless and cruel. They have tried to destroy me, but I escaped them easily—taking with me one or two odds and ends that might be useful. I found stuff for clothing, some material for

writing and figuring, and a substance that gives perpetual cold light. It has made my cave life habitable. Food, of course, or sleep, we shall never need again. That to you is novel—to me no different. Only in one thing are we alike now—we are immortal."

He paused and looked down at the city—saddened, brooding.

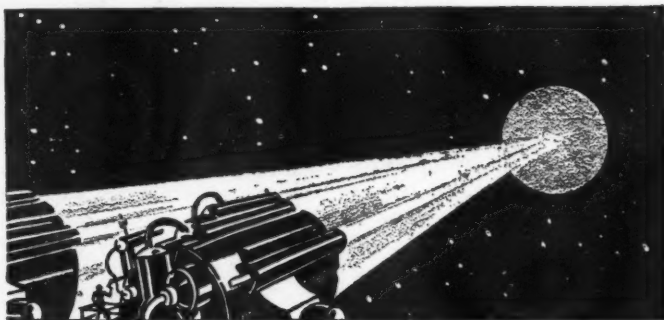
"It is a gigantic punishment," he said at last. "We made a magnificent journey—and this is the price. We are all three indivisible. Nothing can kill or hurt us; that is why I so easily outwitted these people when they tried to destroy me. We have been returned to a world in which we have no part—fugitives of time and space surrounded by untouchable things."

He said no more but motioned us to follow him.

So ends my story—— Through the days and nights we have sat in this cave gazing down on that mad city below, trying—so far vainly—to understand it. Farrington and I are like Greek gods; Pelathon, too, is much more beauteous. And we are deathless! The grim irony of it!

I have written down my experiences with the writing materials at my command, but I realize now I have come to the end of the ghastly punishment that has been meted out to us.

We are alone—utterly alone—unless Pelathon——



Don Kelz of the I.S.P.

by Clifton B. Kruse



Fierce, joyous energy surged through Don Kelz, as he tore into the man with the ruthless ferocity of a cornered beast.

OF THE SEVEN TABLES in the Café of the Purple Flack, six were well crowded with the usual roulek-dazed blasters—tough-whiskered, glazed-eyed menials from the constantly arriving and departing transports of Athalon, Mars.

At the seventh table, well in the darkest corner of the café, sat a leather-faced, taciturn man, garbed in a none-too-clean spaceman's uniform. From time to time he took the barest sip from the small mug of bitters before him. To the few chance remarks which had been

hurled his way when he had first come in, the quiet stranger had given a scant suggestion of a smile. But he offered no reply and seemed relieved when attention was turned from him. Nevertheless, the man's eyes were unusually hard.

The hour grew late and the dimly lighted hall of the Café of the Purple Flack clouded with a bluish haze from the pipefuls of Zulla. The reek of roulek would have caused less-hardened nostrils to sting and burn. Yet the blasters drank on, crowding around now three, now two and finally but one of the tables whose stacks of chips towered even above the tall, full-sized tankards.

At the last table the four winners of the night's gaming played at breath-taking limits. Those who had already drunk or gamed away their wages—patiently earned upon long, hard journeys from Earth, Neptune and even Pluto—gazed enviously upon the remaining four whom luck had thus far favored.

"Four dockues and a ten-eagle!" The large, red-bearded blaster half arose from his chair and pounded a gnarled fist, with the grimy notes, upon the table. "All on the one hand—all of it, I say. Come on, Max Durr—my wages on the X17 from Pluto to Mars against yours upon the scum ship from the asteroids. Shoot it all! Are you a man or do the asteroids shrivel a blaster's nerves?"

For a tense moment the paunchy, ape-like old gray-beard returned the big man's challenging glare. Max Durr's eyes peered cannily from beneath the bushy, steel-gray eyebrows.

"Zahgat!" He spit out in imitation of a torp blast. "But no outcast from a weevil-infested X-freighter can bluff Max Durr." Deliberately, the old man shoved both chips and notes to the center of the table. The café became charged with nefarious expectancy. Big "Bull" Gerdigan looked mean. A few of the less reckless among the onlookers drew

back. They did not relish the look in Bull Gerdigan's eyes.

Cards clicked sharply. For moments scarcely a sound was made. From his position in the far corner the silent stranger arose quietly. He alone seemed unaffected by this dramatic silence, and there was a significant twitch to the corners of the fellow's unusually firm mouth. His gaze now held to the implacable countenance of old Max Durr.

Abruptly, the tension broke. A few men dared laugh. Some one exclaimed: "Durr takes it. Durr wins the pot!"

Yet, scarcely had the old spaceman stretched forth his bony fingers to claw in the money than Bull Gerdigan jumped to his feet. The huge giant roared out a curse. Immediately the place became pitch dark. A second of breathless silence—then the thunder of a flame pistol made a streak of vivid lightning across the room. Men screamed, cursed, fought crazily to break away from the room.

Who fired? Who was hurt? Anxious voices called out the names of comrades in fearful, nerve-rasping tones. Graddus—Dicus—Gerdigan—Heiner! In the midst of the tumult some one thought to light a flare torch. The light gleamed its greenish haze. Piercing shadows leaped about the room. Suddenly a fearful cry cut sharply.

"Gerdigan! It's Gerdigan—dead—burned clear through."

Deep cries of anger burst forth in infernal thunder.

"Durr. Get him! He killed——"

FROM the far end of the room a tall, shadowy figure hurtled the tables. Swiftly he grasped the flare torch from the stiffened fingers which had held it aloft—hurled it across the room. Now, into the midst of the sweltering, struggling mass the lithe, strong body tore its way.

"Max Durr!" The fierce whisper was

a command. Bewilderedly the old spaceman felt the steel clutch of a powerful hand upon his arm. The café had become a madhouse. Nevertheless, the firm hand guided and shoved him from the place.

The strong body of the strange one who directed him on, forced its way between the old spaceman and the struggling blasters. None too soon did old Max feel the sting of cold night air upon his hot body. The shrill cries issuing from the darkened café had already brought the nearest guardsman to investigate.

"Run—this way. Follow me!"

Through the darkness of night the two ran with frantic haste. Max Durr wheezed from the strain of keeping up with his mysterious benefactor. But, clearly, the fellow knew this section of Athalon thoroughly. They were keeping well to the black, unlighted alleys, and, indeed, so frequent were the twists and turns that the old man was completely lost.

The other halted. Max Durr leaned wearily against a dark brick wall. Sharp pains cut cruelly into his lungs. He moaned as he breathed.

"I didn't—kill him." Max Durr forced the words between sucking gasps for air. "I swear it."

The voice was firm. The stranger was not the slightest out of breath despite the wild dash. Mutely, old Max marveled at the strength and endurance of such a one. A key rasped in a lock. The stranger was hauling at old Max's arm, indicating that he should enter the pitch-black hole. Then, inside the place and the door secured again, the stranger flicked on a light.

Max Durr's eyes widened. He stepped back in awe at sight of the strong face which held such a deep, searching gaze upon him. It was the quiet fellow who had spent much of the evening to himself at the most distant table.

"Who—who are you?" Old Max clawed nervously at his unkempt gray beard.

The younger man smiled. Immediately his face became rigidly harsh again. He had reached to the inside pocket of the worn jacket. Withdrawing the hand, he extended it, palm upward, toward the befuddled old spaceman. Max Durr stared at the small bronzed disk. He gasped and looked up quickly to meet those piercing black eyes again.

"The—the ISP!"

Max Durr seemed to wilt visibly. Tremors racked the old body and what patches of the bewrinkled face still showed beneath the scraggy beard were drained of all color.

"I didn't kill Gerdigan. Truly I swear it. By the glory of the triple sun I swear it. Look once, sir. Look at my own gun. Never fired has it been this day, sir. I tell you——"

"Never mind that." The younger man raised a hand to check the outburst. "I see you appreciate the significance of the Interplanetary Secret Police. Furthermore, you know enough of the council's code of crime procedure to realize that the evidence against you tonight would put you before a firing squad within a week."

"Sir, I swear I didn't——"

"I know you didn't kill Gerdigan, Durr. I know you are innocent because I was watching you at the time. Now, understand this. I brought you here for a reason. I had singled you out from the group at the Café of the Purple Flack. In fact I had intended following you from the café, but this killing interfered. We are fortunate that it did not quite serve to upset my plans."

The old spaceman nodded in slow comprehension. He could not quite understand it, however. Miraculously had he been rescued by this mysterious officer of the ISP. Of one thing only was old Max Durr not in doubt: unquestionably he owed his life to the

swiftness and strength of this stranger. Max Durr stiffened himself to attention. His quivering hand flashed a salute.

"Max Durr, mechanic second class of the X942, at your service, sir."

The officer laughed. The grotesque sincerity of the old spaceman was touching. Impulsively he shot out his own huge fist, grasped the old man's hand and squeezed it.

"Don Kelz of the ISP—and, confound your bloody soul, I like you, Max Durr. I think that I made no mistake in selecting you to-night."

"Don Kelz! Don Kelz of the ISP!" Max Durr's back would have brought forth a glow of pride to the most exacting drill sergeant. He attempted a salute again, but the quivering fingers grasped the wild strands of his gray beard instead. His eyes fairly popped from beneath the bushy brows. "Say the word, Don Kelz. 'Tis the climax of a life of faithful service upon the council's transports that has come to Mechanic Durr. What is it about, sir?"

THE OFFICER was deadly serious now. He approached the old spaceman slowly; his deep-set eyes seemed to pierce the astounded stare of old Max.

"You came to the Café of the Purple Flack with two companions to-night? One was a hunchback, deaf and——"

"Nargate you mean!" Max Durr exclaimed eagerly. "'Twas he and the white-headed John Oskow. They had arrived but this morning upon an old freighter from Jupiter."

"You've shipped with them before," Don Kelz pursued. "Upon a special engineering transport, the W9, during the rehabilitation of Saturn?"

Max Durr nodded excitedly. "Truly and most accurately observed, sir. And 'twas the very W9 which suddenly dropped from her course as we were blasting from Saturn. Struck the outer ring of Saturn, she did, and the bombarding rocks of the ring smashed her

torps. Three decks blew to smithereens, sir—killing forty blasters and two of the space ship's officers. Nargate was in the lunar deck—lost his ears, he did, and has heard not the barest chirp of a sound since.

"John Oskow gave his left eye. 'Twas hell itself, sir. Had I not been on duty repairing an oil gauge upon the plotdeck 'twould have been the last of old Max Durr, too. But what does such a tale mean to the ISP? That was eighteen Earth months ago, and——"

"Just this, Max Durr. The W9 bore a secret cargo of dextronite—a ten-liter cask which had been uncovered amid the débris of a Saturnian ray cannon. It was in the mysterious compound dextronite that the Saturnians found the power to fire their choking energy web around Earth. After the holocaust upon Saturn all their secrets as well as their unusual civilization was wiped out—except this single cask!"

Max Durr tensed. There was a magnetic timbre to the officer's voice.

"But understand this, Max Durr: The transports which blasted to the wrecked W9 found no trace of the dextronite. And of the five survivors, not a one knew a thing of its disappearance. Then, a scant Earth month after you and the other four were returned to Earth, both surviving officers, Engineer Goring and Captain Dane, were murdered."

Don Kelz forced his words sharply now: "The only thing which saved you, Nargate and Oskow was your fortunate choice in signing up so soon for interplanetary service again. Nargate and Oskow were off on the X901 to Neptune—you had left twenty-four hours earlier upon a transport bound for the asteroids.

"Do you follow me, Durr? The affair of the W9 and the missing dextronite has been in the hands of the secret police for these eighteen months. But until chance caused you three to

come together again here at Athalon, Mars, upon the return journeys of your contracts, there was little we could do.

"To-night I followed you three to the Café of the Purple Flack. I must choose but one of you for a very special mission. And I must contact that one secretly—for what we have since uncovered indicates that the ones who wrecked the W9 and stole the dextronite may have reason to dispose of you, particularly were they to suspect that an officer of the ISP had reached you."

Max Durr shook his head in bewilderment. Thickly, he mumbled: "Then they'll be after me! Could it have been that in the darkness—the killer missed me and burned down Gerdigan?"

Don Kelz had turned away. From a nondescript compartment in the wall of the shack he pulled out a flame pistol, flare torch, and certain other tools which the wondering old spaceman could not identify. But he offered no protest when the officer tossed him the flame pistol.

"We must hurry. It is likely that certain ones among those at the café to-night will construe our disappearance for what it is. At least two of the others in that crowd were not ordinary blasters. I know a spaceman's waddle too well—and their eyes were suspiciously sharp. But are you ready, Durr?"

"All set, sir." Max Durr's rasping voice came near breaking with an emotional fervor new to him. "We'll rat them out. We'll——"

DON KELZ whirled sharply upon him. He placed both hands upon the old man's broad shoulders.

"Remember this, Max Durr. It is no ordinary criminal that we are after. Some powerful group is at work and they've got a ten-liter cask of dextronite. Remember that when the time comes they can use it—use it to blow Athalon—all of Mars if need be—into a mass of ruin. You are with the ISP now. Our

mission is to serve. Duty comes first—and Max Durr—hear me—we may never again see the rays of the Sun."

Unflinchingly old Max returned the fierce gaze.

"We're—we're on the job together. Don Kelz—the powers bless your name, sir—you made no mistake in picking out old Max Durr to help you."

Even as he spoke the old man sensed a subtle change in the officer before him. Don Kelz had hastened over to the timbered door, was leaning his ear against it, listening intently. Yet before old Max could shape his question into words, Don Kelz sprang to his side, grasped his arm in a viselike grip.

"Max Durr," his voice was low, yet charged with some strangely hypnotic power. "For the honor of the council—remember nothing of what has occurred this night—save that you fled alone—alone! Do you hear? And of Don Kelz of the ISP you know nothing! You must carry on. Trust me—and never lose heart."

Quickly Don Kelz gripped the old man's hand. Old Max stammered incoherently.

"To the bitter end, sir, but I don't quite——"

Abruptly, he stopped. He was suddenly conscious of being alone. The officer had vanished. In stupid amazement the old spaceman stared about the dingy room. Of Don Kelz he neither saw nor heard the barest evidence.

Scarcely had he assembled his confused thoughts than a thunderous battering shook the door. The shock caused old Max to leap in wild fright. Now a voice barked sharply: "Open up! Open up, Blaster Durr, or we burn you out."

There was no other escape. Frantically, the old fellow clawed over the walls. There wasn't a catch, a window. Planks shrieked a sibilant protest to the ramming without. Steadily, blow after blow bounded against the door. Shiver-

ing in paralyzing terror, old Max cowered against the far wall, his eyes protruding in sheer horror, his sagging mouth quivering as with severe cold.

With a splintering crash, the door burst open. Straight across it dashed three masked men. One of them strained to hold back a drooling-mouthed brock, the slithering, reptilian bloodhound of Mars. The foremost of the group held his flame pistol upon the trembling old paunch. Now swiftly another grasped old Max's waxlike arms, twisting them behind his back.

"There's just one here, Gotho," the pistol bearer called over his shoulder to the man in the doorway with the leashed brock. "Dicus said there were two. Listen, Durr—you're going to talk and it'll be easier on you if you give us the right answers now. Who was that fellow that came here with you? And where is he? Come on, talk! Talk! Why, you damned old——"

Viciously, his blood pounding madly, old Max twisted so that the one who clung to his arms was hurled sharply against the wall. It was a crazy chance, but Max Durr was beyond reason. A moment before, his very soul had quavered, but now he was conscious of a strange, terrible power in his aged body. It was as if the mysterious secret-service officer were beside him, commanding him.

A lightning grasp clutched the arm which held the flame pistol. Startled, the fellow fell back, instinctively pressing the stud of the gun. The blue-white flame seared a blinding arc, crackling the wall and ceiling of the room. Frantically he tore at the hand which held the pistol. The flame swerved across the room.

A sickening cry cut through the place. The seared corpse of one of the intruders slumped to the floor. But old Max was falling with the backward stumble of the one who still clutched

the flame pistol. Bodies thwacked upon the planked flooring.

Abruptly his ears roared with hideous thunder. Stupidly, old Max swayed and then slumped into an inert heap.

SHARP EYES pierced the shadowy darkness. Dimly, there glowed from the cloudless sky the first flush of the lesser moon of Mars. Gliding noiselessly from the niche in the wall, Don Kelz padded softly along the winding turns. Occasionally he could see the clear outlines of the two who hurried through the black alleys bearing an inert form. The two made speedily beyond the clatter of ramshackle buildings for a clearing to the north. Now they halted briefly. Then one of them bore the old spaceman's body. The other went ahead in the darkness.

Sensing their purpose, Don Kelz skirted the line of buildings. Yet he had gone a scant hundred yards before he heard the soft pur of an air cab. A voice called out, "ready." The one who had waited stumbled forward, breathing heavily beneath his burden.

A quick glance skyward revealed the rim of the lesser moon just above a distant roof top. Had they been expecting such a maneuver, they might have observed the officer's shadowy outline bounding across the clearing. The door of the air cab clicked shut. The pur became a loud hum. Don Kelz straightened up, ran swiftly, leaped.

Strong fingers curled about the narrow axle of the landing gear. Even as the air cab soared upward, Don Kelz hauled himself beneath the flooring, locking his legs around the landing gear and clutching a wheel firmly. Athalon dropped away with dizzying speed. Far below the vast outpost city—the greatest of all of Earth men's interplanetary settlements—lay in slumbering darkness. Here and there, far below, tiny specks of light gleamed. To the northward the

magnificent space ship drome glowed in phosphorescent brilliance.

The course of the speeding air cab swerved sharply westward. In the darkness below them now were the great pens for Earth cattle; scaly beasts from Pluto; two, four and even ten-footed creatures shipped to and from all points in the solar system, beasts for food and beasts of labor. A sudden loss of altitude caused the air cab to skim the tops of the pens. Weird grunts, barks and cries ascended as the frightened things shied at the hurtling black cab above them.

Yet, to the tense, straining officer, these commonplace sights and sounds had no significance other than that of location. They were well west of the Earth settlement proper. The slackening speed indicated that the destination of the cab was at some point amid the crumpled stone ruins of an ancient civilization.

A queer tingling coursed along his spine. Don Kelz's mind throbbed with frantic thought. The tottering ruins of the old Athalon, of the true Martian civilization, were mysteries suitable for impractical professors. Could it be that those who held the precious dextronite had established a secret hide-out among these ancient ruins?

In the midst of his perplexing thoughts cold realization awoke Don Kelz to desperate necessity. The air cab was settling groundward. Don Kelz poised himself, sucked in his breath, tensed. The air cab must drop slowly lest a jagged outcropping of crumbling stone wreck her. This factor gave him his chance. Twenty feet—fifteen—ten—Don Kelz dropped, rolled, lay still.

The air cab grated upon the rough soil scarcely an arm's length from his motionless body. Every fiber of his body tingled with the glory of pursuit. His eyes gleamed; his fingers twitched. Tonight was the culmination of eighteen long Earth months of patient work.

The figures emerged cautiously, quietly, from the dark blotch of the air cab. Don Kelz listened tensely, his hypersensitive ears attuned to the faintest sound. Though no word had been uttered, he knew that the old spaceman was alive. He could distinctly hear the wheezing gasp, slight though it was, of Max Durr's labored breathing.

One of the men had advanced to an ancient doorway. In a peculiar manner he rapped upon the stone, called a sharp, whispered code word. From somewhere within the mass of stone an answering voice responded. Now, swiftly, the two men gathered up the unconscious form of the old spaceman and disappeared within a black cleavage in the stone.

KEEPING well to the black shadows of the walls, Don Kelz moved noiselessly toward that point where the two had seemingly blended into the irregular stone mass. With his right hand moving before him along the wall as he crept forward, he rounded the sharp turn. The long narrow cleft—remnant of an ancient doorway—was scarcely the width of a man's body. Don Kelz stepped into the aperture, peered into thick darkness.

This was a narrow hallway, pitch-black and with the smooth flooring inclined slightly downward. Step by step, he stole forward, his right hand still feeling the way along the smooth, cool stones. Twenty paces and the hall opened into what was probably an ancient room. Don Kelz was listening now, straining his ears to hear now in this direction, now in that. Silence, ominously heavy, mocked his anxiously beating heart. Feeling his way completely around the room he determined the location of the three crevice-like exits other than the one through which he had entered.

Stiffing a fleeting tremor of panic, Don Kelz forced himself to enter each

of the three in turn. There was no slightest sound to guide him. Yet obviously those others had proceeded through one of these tunnelliike hallways. Forcing himself to reason calmly, he chose the one to the right. The floor here dropped away at a sharp angle. It seemed logical that the criminals would have buried themselves as deeply as possible.

Don Kelz pressed forward with less caution now. Cold fear struck at his nerve ends. His hand slid smoothly along the clammy wall, as the narrow way wound deeper and deeper into the unexplored regions below the ruins of the ancient Martian city.

Twice again must he choose between the branching tunnelways, as the narrow, winding ramp burrowed farther and farther underground. Abruptly, he stopped. The walls of the ramp widened sharply to yet another mysterious cavern. As he stepped into the place, a current of cold air chilled the officer's sweating forehead. He sensed the unusual vastness of a great hall. Doubtless, in ages long gone by, this had been a great assembly chamber. A soft tinkle caused him to halt. Again he heard it. It was the sound of the methodical *drip, drip, drip* of water falling from some high place to smooth, hard stone.

Pausing only long enough to scratch a sharp guide mark upon the wall beside the tunnel through which he had come, Don Kelz moved speedily across the cavern. Abruptly, his foot struck something. He pitched forward, the palms of his hands slapped the clammy stones as he broke his fall. Turning about in a hasty scramble Don Kelz felt over the stones. His hands struck a long metal pipe extending across the floor of the cavern. Clutching the pipe in rigid fingers the officer forcibly restrained hysterical laughter. His nerves had been on edge.

Tingling with excitement, Don Kelz followed the course of the pipe. To

the far side of the cavern—a good forty paces—the pipe joined an upright extension. Stout braces held the upright pipe firmly against the smooth walls.

His body struck a metal object. He fell over it. Don Kelz was calm now. His eyes gleamed defiance at the thick darkness. Reaching up, his fingers curled about yet another metal brace. He had stumbled upon the metal rungs of a ladder which led upward along the course of the upright water pipe. He was no longer lost.

This was indeed the secret hide-out of the mysterious marauders. Clearly, he had not followed the right path but even so he had gained in losing the trail. Luck was with Don Kelz. Obviously the hide-out was somewhere above him. The criminals had tapped an underground spring in this ancient hall in order to insure themselves of a safe and secret water supply.

He had climbed fully a hundred feet above the floor of the cavern before reaching the curved ceiling. Nevertheless, the pipe and metal ladder proceeded on up through a narrow tube. Fiercely, he lashed aching muscles and sore fingers in the long, arduous climb.

DON KELZ glided noiselessly into the dimly lighted room. For a moment the light stung his eyes. Then the mass of the machines assumed shape. Bending over a desk, a scant ten paces before him, he saw a man busily engaged in repairing some small mechanism. The fellow had not heard the officer's entrance from the tunnel. Don Kelz stepped forward. The crunch of his boot upon the stone caused the man to jerk around quickly. With the same movement he had tugged at his flame pistol.

The fellow's eyes widened incredulously. His mouth opened to cry out a warning even as he jerked the flame pistol toward the intruder. But before a sound could be uttered Don Kelz

pressed the stud of his own gun. The man slumped forward.

The doorway beyond opened to a short hallway. Speedily, Don Kelz crossed the room. A sudden exclamation halted him. Some one was calling out from the room beyond. Don Kelz pressed close to the wall, eyes alert, gun ready.

"Something must be wrong! Alex didn't—"

Two men, coming hurriedly through the hall, stopped abruptly. Their eyes popped in terror. Before them stood the menacing figure of the agent of the ISP.

"Keep your hands up," Don Kelz barked the order sharply, keeping his voice low.

For a moment the two teetered there in the hall. Neither answered. Don Kelz had started toward them when, suddenly, the one farthest away lowered his arms. Giving his companion a quick shove, he ducked and ran back.

Don Kelz jumped away to miss the stumbling body. Now, desperately, he fired the pistol—but too late. The searing flame sprayed the heavy steel door to the room beyond.

Twisting himself even as he fell into the room, the one who had deflected Don Kelz's aim lurched in a low tackle. The sudden crash of the heavy body against his knees sent Don Kelz spinning backward. His head thwacked against the wall, the gun sailing from his hand across the room. Don Kelz came up fighting. The other man was clawing at him. Now in the full grip of animal ferocity the two wrestled in death clutches. The other was strong, his body massive. Nevertheless, the officer of the ISP was young. Blood throbbled heatedly in his veins.

Summoning all his strength, Don Kelz shot his knees up sharply. The large man gasped. His clawing grip loosened. In that fraction of a second Don Kelz heaved up, hammered his fist viciously

into his opponent. He beat mercilessly until the other sagged to the floor, his flabby mouth drooling in pain.

Don Kelz staggered to his feet—yet his eyes held, in rigid disbelief, to the man on the floor.

"Dar Warnack—you—"

In brief seconds the shocking fact congealed in the officer's swirling brain. Dar Warnack, commander of Earth's outpost city of Athalon, Mars, was one of the mysterious conspirators against the council. But there was no time for wonderment. The traitorous commander lay in a moaning heap, and beyond that steel door—

Abruptly, the room trembled with a shrill whine. The fearful vibration ascended in deafening sibilation. The lights in the room dimmed to faint, yellowish glows. It was the dreaded howl of a powerful ray cannon.

"Dar Warnack!" Don Kelz bent over the commander. Fiercely he clutched the body, shook the man. "Listen—in the name of humanity—if you have left in you any spark of manhood—order them to stop!"

Commander Warnack rolled his eyes, attempted to twist his head away from those steel-sharp fingers which were biting into his throat. Impatiently, Don Kelz battered the man's head against the stone. Dar Warnack cursed. Mad laughter gurgled insanely from thick, sagging lips.

The shrill scream of the nefarious mechanism beyond the steel door burned into the impatient officer's consciousness. Impulsively, he slammed Dar Warnack's head down against the stone flooring with vindictive hate.

Don Kelz swayed above the commander's motionless body, glared about the room. His fists clenched in desperation. That door! He had to get beyond it. He had to stop that infernal machine. With the supply of dextronite there was scant limit to the destruction a secret ray cannon might wreak.

They could conquer the Martian outpost, hold off whole fleets of the council's transports. Obviously this had not been the first intention of Warnack and his conspirators, but with Warnack definitely out of it and only death to be gained by surrender, the remainder of the gang would surely fight.

THE WHINE began to waver in pitch. This could mean but one thing. Don Kelz knew enough of ray cannons to interpret the weird singsong. Already, they were discharging the lethal waves which would soon build up sufficiently to destroy Athalon.

Frantically, Don Kelz grasped a flame pistol from Warnack's holster. He jumped over the body to the steel door. Securing his own flame torch he pressed both pistol and torch against the massive lock, pressed both studs.

Crackling flame bit into the steel. Both torch and pistol quivered in the sturdy grip and Don Kelz poured hot, searing energy into the steel. Fumes stung his eyes, burned his nose and throat. Still the white-hot fury tore into the metal. His eyes were slits. He seemed not to breathe. He poised himself upon tiptoes. The metal door seemed to buckle away from the consuming flares.

Then, swiftly, his body a perfectly timed machine, Don Kelz dropped torch and pistol. Simultaneously, his shoulder crashed against the door. Metal rasped! The door swung in sharply. Yet even as it burst open, the officer's body drove fiercely into the brilliantly glowing room.

The noise of the terrible machine mass which filled nearly all of the great hall screamed with horrible intensity. Before the controls three men hunched in desperate activity. The slushing sound of Don Kelz's body sliding across the smooth stone flooring aroused but one of them. The fellow whirled, reached for his flame pistol.

The searing flame lashed out. Yet

AST-7

Don Kelz had rolled, twisted, kicked. Catlike he was on his feet, crouching. The flame pistol swerved in a flashing arc just as the officer shot forward in a flying tackle.

So fierce was the charge that his body drove all three operators back upon the controls. The machine howled to a maddening pitch. Lances of flame shot suddenly from point to point, crackling malevolently. Don Kelz was fighting crazily, blindly, pouring full strength and energy into straining muscles.

Taken by surprise the three operators struggled in disorganized fright. The strange beastlike man seemed everywhere at once. The four became a grunting, sweating, cursing entanglement of arms and legs.

"Cut the power!" One of them yelled. "He forced in the full feed lever. He made——"

A fist had crashed into the fellow's mouth. Still the terrible machine roared in full blast. There was no time for direction or control. The thing was a seething, churning mass of deathly energy. But they were getting to him now. They were beating Don Kelz to the floor. He couldn't last long. Frantically, he struggled, determined to fight so long as life would last.

Then a blinding lance of fire cut into the milling group. An operator staggered back, fell lifeless to the floor. Another stab of fire came and Don Kelz saw the face of another become chalk-white. His arms had been burned away. A fiery flame pistol had burned them to useless ash.

Fierce, joyous energy surged through Don Kelz. Some one was helping him. Some one had fired that flame pistol and removed two of the operators. With the ruthless ferocity of a cornered beast Don Kelz tore into the remaining man. Swaying drunkenly to his feet, the body of his victim held above his head Don Kelz hurled the mass straight toward the fiery points of the ray cannon.

He had won! For moments he stood there, swaying unsteadily and seeing only dead bodies. Then the straining pulsations of the machine drove him to full consciousness. He was at the controls, working swiftly, expertly.

The whine of the monster ray cannon died down weirdly. For a moment the oppressive silence seemed more deafening than the roar of tortured energy. A voice cut with shocking keenness into the trancelike stillness.

"Don Kelz—I say, officer—how long must I ride here in this blessed harness?"

Don Kelz jumped, stared open-mouthed. Then he laughed. In sheer nervous reaction he laughed until hot tears soothed his smarting eyes.

There across the room, suspended well above the floor, old Max Durr hung in a sort of cage which had been cut from the leather of an old space suit. In one hand he waved a flame pistol.

"Get me down, I say. Glory to the council, Don Kelz, but every bone of me throbs with a special pain of his own." Old Max squirmed in the queer cage, his gray beard waving stiffly with the rapid working of his jaw as the words tumbled forth.

"And did I pick them off! But say, Don Kelz, 'twas a crafty trick to hide this blessed gun close to my skin, heh? How do I rank as an ISP? But hurry — I want to get down."

IT WAS DAYBREAK in Athalon when the two reached the headquarters building. Everywhere men stood about in perplexed, questioning groups, talking of the weird vibrations which had quavered throughout the city the night before.

Captain Silbert, acting commander of Athalon, had completed the report. The crowded assembly hall was quiet. All eyes were fixed upon the two ragged spacemen who had brought them the incredible message.

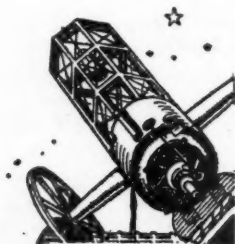
"Let us rejoice that this unbelievable horror is ended. Athalon has experienced her first traitor—and, by the courage and strength of the men of the ISP, escaped a fate worse than annihilation. As you have requested, a transport will carry you and your aid, Max Durr, Earthward at once."

Don Kelz saluted. His eyes were heavy with weariness, though his mouth was still firm and smiling.

"Great Polaris! I just remembered it." Max Durr seemed suddenly stricken.

"What? What's that?"

Old Max looked up appealingly to Don Kelz. "My money. I just remembered. We left it at the Café of the Purple Flack—all of it—my wages—my winnings. Ah, woe is me—truly I must have come into my dotage—my winnings—all of it!"



With Katharine in his arms, he leaped, slipped and half fell behind this second juggernaut which was plunging—



*The
Conclusion of:*

Blue Magic

by Charles Willard Diffin

UP TO NOW: From Dra Tor's research into electronic speed variations within the atom came much magic. Time itself was speeded up; all the perceptions, the functions of men and ani-

mals and plants, took the new tempo. On Xandros, a tiny satellite of Jupiter which they know as Grokara, the cinema of time runs fast. All matter becomes invisible to one on slow time.

Then Dra Tor's death was announced, and his daughter, Dra Vonga, using his magic, became ruler. She sent a space ship to Earth, and, in the high Sierra, Rance Driggs, forestry man, finds a blue jewel. Looking into it, he sees Dra Vonga, a ravishing and exotic beauty. Here is more of Dra Tor's magic—television through synchronous vibrations within the jewels, tuned vibrations almost as high pitched as thought, and a carrier for thought waves.

With Katharine—"Kitten"—Putnam, Driggs is captured by grotesque, three-toed, green-fleshed men—Grokarian men, brought to Xandros by Dra Vonga. The two Earth folk are taken to Xandros. There Dra Vonga, infatuated with the Earth man, would blast Katharine in the magic of her withering blue flames, but sends her away instead.

Driggs loves Katharine, yet against his own will he is tremendously drawn to Dra Vonga whose beauty is almost irresistible.

On Xandros, Driggs finds Duvaurier, a Frenchman who has invented a space ship and whose secret trial flight from Earth has ended in captivity on Xandros. Duvaurier has been there a hundred Earth years of time, yet Driggs finds that he left the Earth only the year before. Duvaurier built the ship which brought Driggs and Katharine, and now five more are nearing completion, for Dra Vonga plans further conquest.

The ship which took Katharine away returns bearing marks of the black chalk cliffs of Grokara, and Grokara is a fearful place.

Duvaurier's little rusted ship in which he made his first flight is still able to drive along the lines of force which Duvaurier has found in static tension throughout all space, but the green guards prevent escape. Until Fozan, a Xandrian, turns loose the herd of shogas, and the great beasts, which are

only cattle to Xandrians, charge in frenzy upon the green guards.

If Driggs and Duvaurier can rescue Katharine, then drive out into space, they may escape. They run for the ship as the maddened shogas charge down.

XVII.

THE THUNDER of the herd and the din of their snarling cries smothered all other sounds. Driggs opened his mouth and shouted to Duvaurier and felt the words tearing at his throat. Still he heard no sound but only the pandemonium of the charging herd. He pitched Duvaurier head first toward the little round port in the rusted side of the ship and flung himself on the red rock under the curve of the ship's plates.

The maddened shogas went by, and Driggs got to his feet, but he stood for a moment beside the open port and looked across the red field.

Inside the ship, Duvaurier's voice cried out: "Vite! Enter, m'sieu! They have other weapons, the green ones!"

From a low gray building near the first of the big ships a knot of green figures emerged. They were clustered together as they moved out.

Two shogas bore down upon them. The shogas' necks were arched, their heads thrust forward, and they screamed as they ran. They were still fifty feet away when the knot of men opened out and something they had carried was left sparkling under the sun.

For an instant it gleamed, then a single thin ray of pale violet flicked out, and the blinding brilliance of it blocked out the other gleaming and made sunlight pale. It was a knife, a rapier of light, that flicked once and touched the great beasts—and suddenly they were shogas no longer, but only two huge hulks that pitched limply forward

and rolled and became at last inert mounds, shaggy and gray.

Twice the green men of Grokara swung the stabbing ray before Driggs moved. And even then it was the quiver of the rusted steel beneath his hand that brought him to his senses.

"*Vite, m'sieu'!*" Duvaaurier's voice was imploring. Driggs turned and threw himself in a headlong dive through the open port. And, with the doorway still open, the little craft that had brought Duvaaurier through space surged up in a straight, vertical lift.

Duvaaurier closed the port. He moved a switch for a moment, and lead around the rim of the port became soft, then hardened instantly and sealed the rim. He looked at gauges and tried gas cocks which hissed loudly in the closed cabin of the ship. He said at last:

"That violet ray, my friend, is not good. The ray which you saw was harmless, but what you did not see was ultra-violet of very short wave lengths. It is more of Dra Tor's magic. What a pity that Dra Tor died! This ray is the death ray that comes from blue stars. Our Earth astronomers know of it. It fills all space, but in the walls of my little ship is lead which screens it out."

Driggs said tonelessly: "That's good." The wonder of this surging lift was stunning him. The whistle of air outside the walls was growing more faint. He said: "Now if we can find Grokara—damn the word!—I mean Jupiter—then find Kitten——"

He did not finish. Up ahead Duvaaurier was closing a switch which made Driggs heavy with some new gravitation beneath his feet. Then, in the central framework of the ship, three little radial cylinders moved and swung toward the bow, and with that the surge of the ship forward was almost unbearable.

From up forward Duvaaurier said calmly: "As to mademoiselle, we will

see. But for Grokara—behold, my friend; Grokara is not hard to find."

He was pointing through a forward port where, in a darkening sky, a moon, incredibly huge, shone with green, lustrous light.

IT WAS still green when it had changed from a moon to a great mountain-roughened globe, and from that to merely an expanse of barren, gray-green rock a few thousand feet below. The rock was the color of mildew and reached out endlessly toward an indefinite horizon. The ship was flying beneath a blanket of cloud that made the land below unchangingly dreary.

"Grokara," Duvaaurier said, "is of an enormous size, but it is in no way good. The green color is of copper carbonate, for the rock is filled with the metal. Now comes a gray ocean and beyond that the land of the green-fleshed men."

The gray ocean under a cloud-filled sky passed swiftly; then came land and evidences of plowed fields. But the cities were merely clusters of rounded earth mounds. Among them groups of dark figures seemed as unmoving as the mounds.

Duvaaurier said, "They are on slow time," and added: "I came here with *her*. How incredible seemed the green ones then!

"But I remembered the research of a professor at the University of Alabama in your own country. This professor said that only by accident had man's blood been red, for the green chlorocruorin which he discovered in certain sea worms was equally a carrier of oxygen. And here on Grokara both green and red-blooded animals have evolved! One gets used to them in time."

Duvaaurier had cut down the ship's speed to pass through air without undue heating, but still the rectangles of tilled ground and the clusters of mounds poured swiftly beneath. After that

came mountains, with the ship sweeping up in a great burst of speed to clear them. Then Duvaurier pointed ahead.

"The black chalk cliffs," he said, "and—which is not well for mademoiselle—the land of the *karanas*."

Driggs snapped out: "You didn't tell me that. What are the *karanas*?"

"Man-beasts, yet, I think, neither quite beasts nor men. But they are horrible, m'sieu'. And I did not tell you because what could you do?"

"But there is one hope, my friend Driggs. There on Grokara is a plateau which in some odd way is insulated from the rest. To permit the working of mines on that plateau, Dra Vonga, by means of the tuning mechanism in the gray ship, was able to communicate this fast vibration to the plateau.

"The time zone surrounding the ship was enlarged, and included the plateau; and the plateau itself became on fast time. But the *karanas*, having first been driven away, have remained on slow time. Now the plateau is invisible to them, and they avoid it unless—"

Duvaurier paused and bit nervously at his lip.

"Go on," Driggs said harshly.

"Unless there is food that attracts them," Duvaurier said. "They see nothing, but their sense of scent is keen."

Driggs answered: "Yeah, sure——" and did not know what he said. He stared blindly ahead toward dull black cliffs—the black chalk cliffs of Grokara.

HORIZONTALLY across their face was a broad band of white that Duvaurier said might be the insulating stratum. He moved small levers, and the ship lifted easily. Atop the cliffs was a plateau that seemed carpeted with green mould. It slipped smoothly beneath the speeding ship and became less

level, and the green was broken by deep canyons and small, steep-sided hills.

On one hill was a fleck of red. Duvaurier set the ship down gently on the level plain near by, and Driggs stood silent, but with his hands making little moves that were like echoes of each motion Duvaurier made in unscrewing the port. For the bit of red on the little hill was very quiet.

Then he sprang outside the ship, but stood on the green rock, crouching, tensed and ready to spring aside. He did not move, for he was facing as fear-some a beast as he had ever seen.

The ship had landed beside it. It was on all fours, facing lengthwise of the ship and so looking directly toward Driggs only ten feet away. It was a shaggy beast, its hair matted with filth; yet even down on all four feet its back was higher than Driggs' waist. Its head was thrust forward and tipped up as a man's head would be if he walked in such a way. And the face was grotesquely, yet horribly, that of a man.

It wasn't an ape face, nor gorilla, for the cunning in the eyes was human cunning, though the ferocity was that of a beast.

Driggs stood rigid for a single instant, his tensed muscles ready to throw him to either side; then he knew that the thing before him was almost as still. It was moving, but the motion was slow.

It came upright with dreadful deliberation and stood on its hind feet, and the forepaws that it reached out were not paws but hands. The front of the thing as it stood erect was almost hairless. It was the torso of a man, Driggs saw, and above it that dreadful face and the head of a man. He saw the nostril holes in its flattened nose distend as the beast got his scent. Its mouth opened wide and Driggs knew it was uttering some hideous cry, yet no sound came.

Beyond this one were others that also stood erect and opened their nostrils

and rolled their lips back from yellowed fangs.

Back of Driggs, Duvaurier spoke: "It is like the slow cinema picture, n'est-ce pas? This, m'sieu', is how you appeared slow to *her* when she retarded your tempo. But behold the *karanas*—the man-beasts of Grokara."

The beasts were all headed one way. Two, at one side, turned as they got the man scent and drew in toward Driggs; and the one he had first seen took one slow step toward him and then another. It was looking directly at Driggs, yet there was no sharp focus in the gaze but rather a blind staring.

Suddenly Driggs whirled about as the steady forward drift of the beasts took on meaning. Directly ahead of the ship was the red of Katharine Putnam's dress, on the very top of a small, pointed hill. The beasts were headed that way; scores of them were drawing in and converging at that point. At the base of the hill they jammed solidly together and some were halfway up. They moved with the slow, deadly certainty of engulfing water.

Driggs took one step, then Duvaurier's arm was about him, and Duvaurier's voice was shouting:

"No, m'sieu'—they are slow, but once their hands close on you— We will take the ship there, and I, perhaps, can hold it steady in the air while you get out."

Against the side of Driggs' face was sudden pressure. Sharp points touched and pressed in, and another point caught beneath his jaw, then all the points began to close. Duvaurier screamed: "*Karana!*" then Driggs jerked his head free. Close beside him the big hand of the *karana* closed. Its nails were thick and black and hooked like great claws.

He had plenty of time to move away before the hand came forward again. And once more Duvaurier tugged at him with his one good arm and hand. "Come!" he entreated.

But Driggs tore free. Ahead of the ship the wave of beastly things was nearing the top. The side of the little hill was a slowly undulating mass of bodies, writhing beneath a blanket of dark fur. On the hill a bit of red lifted and fluttered in the wind.

XVIII.

KATHARINE PUTNAM had not moved. Driggs had only an irregular mound of red to show that she was there—that and the horde of beasts with infallible scent. And still she did not move while he ran toward her, shifting and dodging among the huge slow-moving things—until one in the very front of those climbing toward her disturbed a great rock.

It rolled and leaped with sudden motion as if it had come to life. It was four or five feet in diameter, gray at first, then wet and shining and red with the ruby redness of fresh blood, for it plowed a furrow as it came through the mass of slow-moving flesh.

And Katharine Putnam stirred at that. She flung up one bare arm and raised her head. She rubbed her eyes like one awakening, then sprang to her feet. Her red frock hung in rags about her. Her face above was ghastly pale. She cried out: "Rance, I didn't mean to sleep—and now they've got me! Don't come! Don't!"

Then Driggs pushed a clawing hand aside, moved swiftly between two huge beasts that turned their heads as they scented him, and vaulted to the top of the rock that had wedged against a blocking mass of horrible flesh.

Ahead of the rock, up the slope of the little hill, an avenue was cleared. It was paved with an oozing red mass no longer distinguishable as separate bodies, and the beasts at each side of it were closing in. They moved less slowly now, for the scent of blood had

reached them. Driggs leaped from the top of the rock and fought for footing on the slippery paving of that horrible way, and climbed. At last he stood beside the girl.

He did not touch her or speak to her. He looked quickly about and saw the same rising horror on all sides. But he was looking for a weapon. He sprang, suddenly, almost down to the nearest *karana*, and bent and heaved on a stone that was beneath another huge block.

Débris from the mine Duvaaurier had spoken of, a heap of great blasted rocks—this was the hill on which Katharine had taken refuge. And the rock fragments were huge. Driggs was clearing smaller pieces from beneath the outer edge of a great greenish-black mass. And at last it moved.

A *karana* had dislodged the first one, and Driggs had seen his chance there. Now he swept Katharine Putnam into his arms and leaped and slipped and half fell and went on again in the wake of this second juggernaut that was plunging on ahead. He was splashed with blood to his knees when he reached level ground, and stood Katharine on her feet.

She said, "That wasn't very nice, Rance, but—but—" Suddenly, her attempt at brave indifference vanished. "Rance," she gasped, "are we getting away, Rance?"

Not fifty feet away was the ship. Duvaaurier had lifted it off the surface of gray-green rock; now he was dropping it back. The ship jarred heavily as it touched, and Duvaaurier jumped out.

But he did not look toward the two nor at the slow *karanas* swinging in toward these new scents. He looked back into the leaden gray sky where a rounded darker blot was swelling like a bubble that is being blown.

Duvaaurier said, "*She* comes. And we cannot escape. My little ship—" then

the big gray craft swooped in, and a tube projecting from the bow swung its muzzle upon them.

DRA VONGA walked down from the opened port. The gold of her hair was matched perfectly by the heavy golden folds of her robe, draped from her shoulders and gathered in at her waist. She glowed as if a single ray of sunshine had broken through the heavy clouds and touched her.

But Duvaaurier made little groaning sounds as Driggs and Katharine came near.

"I think," Duvaaurier said, "that the *karanas* would have been kinder."

The man-beasts were turning toward them from all sides, always moving, converging toward this new prey. One of them was near Dra Vonga, and Dra Vonga's face told of her disgust. She wrapped her robe more closely about her and moved far to one side to avoid any contaminating touch. And, for a single moment, she was between her captives and the ship.

Duvaaurier moved as if galvanized into life. He flung himself forward and dived head first through the open port of his little ship. Sounds came from within. Other barking shouts echoed from the larger ship.

Dra Vonga turned and moved quickly aside. A blue ray like those they had seen in the temple shot from the muzzle of the projector on the big ship.

But Duvaaurier had lifted the smaller craft. It leaped upward in the instant that the blue ray slashed in below. To Driggs' eyes it was gone instantly—gone with the speed of light. And in the same moment he knew that the blue ray had touched them. Then, the ship and Dra Vonga and all the green figures swarming from the port were gone in that impenetrable haze that meant a change of time sense.

A quivering—and the *karanas* in that same instant came to life.

They had been moving forward with deadly certainty, in that slow motion which was horrible, yet which meant safety. Now, instantly, they were moving at terrific speed, rushing in from all sides. And the air was a pandemonium of cries that came from their opened jaws.

Driggs gasped out: "The ray—it has slowed us down!" Then he took the girl in his arms.

He would have thrown her to a place of safety, but one quick glance showed there was none. The nearest *karana* was beside them in one last rush; it stood upright; its hands, with every finger tipped with a black, hooked claw, closed in—then Dra Vonga laughed.

In a single flash of time the fearful din of animal sound was gone. There was only Dra Vonga's soft laughter, and her voice.

"You were so fun-nee!" she said. "So slow, like the *karanas*."

Close before Driggs' staring eyes a great hand with black, hooked claws was closing—slowly. An ugly half-human body back of the claws was leaning forward—slowly. Others of the *karanas* that had been rushing with horrible clamor upon them were again caught in that slow deliberateness of motion.

The claws touched Driggs' face before he jerked away. Then again he picked Katharine up in his arms and dodged and circled and ran until he was free of the crowding beasts that had been almost upon them.

Fifty feet away Dra Vonga was standing beside the big ship. Duvaaurier and his little rusted craft were gone, swallowed up in the depths of space beyond the clouds. Dra Vonga said with childish candor: "I promised not to harm Kit-ten and I did not, but I made no promise for the *karanas*."

"Now, I think I would leave you both here except that Du-vor might return. Besides, Dra Vonga must study this Kit-ten, and see by what magic she

holds you. You could have escaped, Rance Driggs, but you came here instead because she was here. I must know why."

Green men, four or five of them, came forward with drawn weapons, then Driggs and the girl followed Dra Vonga toward the ship.

But once Dra Vonga turned and looked past them across the dreary waste of the gray-green plateau on Grokara where the man-beasts of Grokara circled and drew in again in converging lines toward the human prey. And Dra Vonga smiled sweetly.

"You were fun-nee, but you have shown me how to reward Fozan and the others. They shall have the *karanas* for companions."

Suddenly, her eyes blazed with hate, and she spat out words: "I will bring the *karanas* to Xandros. They will touch their clawed feet to Xandros, and instantly they will be no longer slow. They shall have Xandros for their own; they shall have the men—and the women!"

Dra Vonga turned away then and went inside the ship.

XIX.

DRIGGS and Katharine Putnam were in still another room in Dra Vonga's temple. Arkos, the Grokarian, had brought them there when the gray ship had returned. Now they stood silent, for the room was in darkness except for a single ray of light that came through an aperture above and shone on a pair of black curtains.

The light was blue. The curtains absorbed it and left the rest of the room in darkness. Yet one thing caught the light and reflected it.

At one side of the curtain, on a pedestal, was a blue crystal ball a foot in diameter. A hard, indefinable blue—electric, clear as crystal. It caught the blue light, and wherever one stood

the reflection followed like a never-closing eye.

Driggs, looking at it, had to fight to turn away, for the light was hypnotic—the blue of it or its steady intensity; he could not tell which.

He touched Katharine's hand and found it cold. Under his breath he said, "More voodoo stuff. Don't let it get you."

"I don't like the crystal," she whispered. "I've seen it and looked into it. I saw some rather dreadful things, Rance, but I think she made me see them."

"Hypnotism?"

"Yes, but there was more to it than that."

Driggs broke in with thoughts that he could not drive from his mind for long. "It's been plenty tough for you, but you and I are about washed up now. Duvaurier has gone, and that just fixed up any chance we ever had for a get-away. And it's these poor devils here I'm thinking of. She's going to bring in those *karanas*, and what can I do?"

He rammed his hand into a coat pocket and brought out all that the pocket held—some flakes of tobacco and two discolored matches with blue heads. "They cleaned me," he said; "this is all I've got left."

He had been whispering. Now Katharine pressed his hand and he was still. The heavy black curtains were moving, swinging smoothly apart. And, abruptly, Dra Vonga was before them.

She wore a robe of dead black with a single great sapphire holding it at her waist. It draped loosely over her shoulders, and the creamy richness of her skin on arms and face and throat was changed to the white of alabaster, under that light. Even her hair was like white gold.

But her lips flamed, and her eyes were deep and dark. And the beauty of her, as she stood unmoving for that interminable moment, seemed to reach

out and take Driggs by the throat. He could not breathe for the hurt in his chest. Little tremblings ran through him. His pulse, pounding in his ears, was like the exhaust of an engine far away.

She stood three steps above the level of the room and looked down at them; at the man in his stained clothes where the marks of Grokara had been wiped off, and the girl in her red frock that horrible, black-clawed hands had torn to rags.

And after a time, she spoke: "Once, Rance Driggs, you asked why I had brought you from your Earth. I will tell you now. The blue crystal told me that you would come to show me the lost magic of Dra Tor."

Driggs' laughter was harshly contemptuous, but the sound was largely a reaction against the spell of her beauty that had gripped him a moment before. He was still struggling against it.

"Listen," he said; "I don't fall for that crystal-gazing bunk. Dra Tor taught you plenty of—well, call it magic if you like. He was about a million years ahead of us in science, I guess. But this other stuff, that's something else again."

He stopped, expecting her to flame out at him in anger. He felt that here was the end of their wild adventure, and he was beyond hope and so beyond caring.

But Dra Vonga's eyes did not change. Instead she said patiently: "I will tell it to you as Dra Tor told it to me."

"The little blue jewel which you found when Arkos lost it was tuned to the one I held. You looked into it, and we were joined in thought. But this"—she pointed to the big crystal globe—"is tuned to the great all-thought. For Dra Tor said that we are in an ocean of thought and of truth. We are surrounded by it, and all knowledge is there, but we must learn how to reach out and take it."

Driggs' lips twisted to a cynical smile, but before he could speak Dra Vonga said sharply: "Do not laugh, Rance Driggs. Dra Tor was wise with great wisdom. Look now—and learn!"

SHE came quickly down the three steps, the gold of her sandals twinkling whitely beneath the lower edge of her robe. She crossed to the crystal and stood with one hand above it, but she did not touch it. Then she stepped back.

"Look, Rance Driggs," she said.

Driggs shrugged imperceptibly. He moved over to her side and leaned above the blue ball. But again his thoughts had gone back to Duvaurier and the swiftness with which the little ship had escaped. If they had been five minutes sooner in finding Kitten— But he couldn't blame Duvaurier—

All this had been thought over many times since the gray ship had returned them to Xandros. He was thinking of it all now as he leaned above the blue crystal—and suddenly he found himself face to face with Duvaurier.

The Frenchman was standing in the cabin of his ship. Back of him was the little three-cylindere device he had called his impeller. One cylinder was vertical and slightly forward; the other two pointed straight ahead and were as close as they could be brought together. Duvaurier's body was leaning forward as if resisting terrific acceleration.

And then, for one brief instant, there came to Driggs an unique experience: he heard Duvaurier's thoughts.

It was as if he thought them himself. They were words—pictures—and still they were Duvaurier's thoughts.

Thoughts of the mountain above the red field—of the gash across the mountain that made a transverse scar. They both had stood there when the ship bearing Kitten had passed above their heads. He saw the stratum of blue clay and shale. The limestone above it was

black, and the shelf below was black; there were caves back there in the blue shale, and water trickled from the caves and ran across the black rock.

Thoughts—then, abruptly, Duvaurier was gone, and Dra Vonga was speaking. She asked eagerly: "Did you see the magic? The clouds, and the flames like the blue flames in the temple, yet not the same?"

"I saw Duvaurier." Driggs spoke shortly, for the experience had shaken him.

"Du-vor!" There was only contempt in Dra Vonga's tone.

Abruptly, she bent her own head above the blue crystal. Her lips moved soundlessly and her two hands came up and clasped and opened again with the tensivity of some emotion. Then she drew back cautiously as if almost afraid to move.

"Look," she whispered, "the lost magic of Dra Tor!"

And Driggs, looking into the crystal, found it filled with terrible flames.

Real flames, these. Whatever was burning was hidden under rolling clouds of smoke, and he could not see below; but the smoke was such as burning oil or resins might make, and the black billowing smoke masses were shot through with red tongues that painted them to sultry glowing.

Driggs could almost feel the heat on his face. He drew back. "That's plenty hot, that fire," he said.

Dra Vonga looked at him from wide eyes, and she breathed through parted lips. Off at one side Katharine Putnam stood and watched and said nothing at all.

"Fire!" Dra Vonga said. "It is a new word. But it is the lost magic. And it is known to you!"

Driggs looked across at Katharine and spoke to her. "It's fire," he said. "All the time I've been here I've never seen any fire, but I never thought of it before."

"Listen, Rance Driggs," Dra Vonga interrupted.

"Dra Tor did not tell me this magic, for he said it was not meant for Xandros. But, after much trying, I saw it in the crystal. And I saw that a man from a far star would come with knowledge of the magic, and by the magic he would save me from great harm. After that he and I would be like one person; together we would have all magic. We would rule here and on his world, too, and——"

Driggs asked dryly: "Did you see all that—all of it?"

The words which had been pouring from Dra Vonga's lips came more hesitantly now. "No," she admitted, "the last was always hidden under the black clouds. But it is so because Dra Vonga says it will be. Will you bring this magic to Xandros, Rance Driggs?"

Driggs slid one hand into the pocket of his coat, and his fingers closed on two bits of wood; two matches, commonplace things of his own world. But he was thinking of the resinous forests of Xandros and of what flame would mean.

"Dra Tor"—he was echoing Dra Vonga's words—"was wise with great wisdom. This magic is not for Xandros. But I will bring it for you—once."

XX.

THEY passed out through the great room of the temple, but they stopped, first, a single step inside the arched entrance. For the temple, at the end where Dra Vonga's throne stood on a raised platform, was ablaze with color.

Across the whole end of the room, and clear to the beginning of the high dome, flames filled the air. Blue flames and yellow that came and went and whirled into intricate patterns or blended to countless shades of green and were never still.

Sound came from them as if every

shade had its own note. The sound was music. And it was pleasing, yet disturbing, for it held new chords and new harmonies built up from queer fractional tones. The sound came down out of the flames.

Dra Vonga spoke and broke the spell of them. "The singing flames of Dra Tor," she said reverently. "And now you will go, for Dra Vonga would be alone while the flames talk to her. Kitten will be in no way harmed. And you, Rance Driggs, are free to work the new magic. But let it be soon, for the *karanas* come."

Then, in a room in the outermost circular building, but at the rear, Driggs had a chance for a few words with Katharine before he left.

Kitten was troubled—he could see that—and he wanted to take her in his arms but found it impossible even to touch her hand. A wall had come up between them; something intangible, something he couldn't see clearly but knew it was there.

He walked to an outer door of the room and looked out and found that it faced on more of the wide pavement. Out there the sun was shining as it had shone since first he came. Four ugly, glassy-skinned green men of Grokara sat in the sunshine and looked at Driggs from slitted eyes. They were Kitten's jailers.

Across the pavement, from among distant trees, a plant such as Driggs had seen came rolling. It was drawn into a tight ball, but hands came out from the ball and pushed it across the smooth stone.

Where the breeze blew down from Driggs and carried the human scent the plant stopped abruptly, reversed its motion and rolled swiftly away, until one of the green guards leaped upon it and tore off leafy, cup-shaped hands and ate the red center out of each. The ball was a whirl of struggling stems and leaves that tore free at last and again

formed themselves to a ball that rolled erratically, but swiftly, out of sight.

Driggs hardly saw it. This was Xandros. Things like that happened on Xandros.

Back inside the room Katharine walked across to a chair of ornately carved wood and stood beside it, fingering the carving of an arm rest. She did not look up, but said, "So you're going in for magic in a big way—you and Dra Vonga."

Driggs' answer was a growl. "Magic—hell! But she's a devil; I'll go that far with you."

He did not turn, nor see the girl as she raised her eyes and looked steadily at his lean figure making a black silhouette in the doorway. "Dra Vonga," she said slowly, "is—believe it or not—a lovable child."

Then she added: "She is also the cruelest, most heartless creature I have ever seen. And she is a woman, who, in her way, is desperately in love with you. You knew that, of course, Rance?"

Driggs did not turn. "Yes," he said, "I knew that."

He looked out again at the green guards. "I'd better not talk too much now," he said, "but I've got an idea or two to work out. You'll be all right here, Kitten. Dra Vonga has promised, and I guess there are no mental reservations this time."

"That's nice," Katharine said, and did not look up until after he had gone.

DRIGGS left the temple and went to the red field. Down at the far end five ships gleamed coppery-bright. Four of them were finished, lacking only the installation of those strange generators that Dra Tor had conceived. One in each ship would maintain a vibration zone about it—a magnetic field, perhaps—Driggs could not tell. But inside that zone would be fast time wherever that

ship was. And the fifth ship was nearly done.

He looked then at the mountain close to the ships, and he thought of Duvaurier as he had seen him in the blue sphere.

That had been a damned funny experience. Had he really read Duvaurier's thoughts—and, if he had, what did it mean? Why was Duvaurier thinking of the mountain?

And the blue stratum, too—he could see it like a flat-shadowed gash cut into the mountain and dividing it into an upper and a lower part. Seen from this side, the stratum was not horizontal but was sloped, with a pitch toward the red field.

Driggs shook his head—perhaps those hadn't been Duvaurier's thoughts at all. He went then in search of Fozan.

And, standing on the mountain a little later with Fozan, he looked down on the red field and the solid expanse of forest surrounding it. He said: "Those trees are rotten with pitch and resin. No wonder Dra Tor didn't want them to have fire. Duvaurier kept his mouth shut, too. But we're going to have fire here now."

Fozan said, "Fire? I do not understand. All I know is that the *karanas* will come."

"I'm figuring to give the *karanas* something to think about," Driggs said. "I'll cramp their lovely style quite a bit. After it's all over I want you and your men and the *shogas* to go in there and clean up the *karanas* and green men both. They won't have much fight in them. But first I want a firebreak two hundred feet wide all around this field."

Driggs stopped then and drew a long breath. And, at sight of the bewilderment on Fozan's face, he began again and put everything into simple words. But he cautioned Fozan to say nothing of what it all meant but to drive his men like hell—which last also needed explaining to the bronze-faced man.

Then, through time which would have been many days had there been nights to mark them, Driggs watched the firebreak grow and become a broad avenue circling the field. It was set back from the field by a quarter mile, and Dra Vonga's temple and the lustrous, opalescent homes of the Xandrians were all outside.

Men of Fozan's race worked to make it, and the *shogas*, with rope harnesses on them, hauled on cables and brought the black trees crashing down.

Once Arkos and other Grokarians came in the gray ship, but Dra Vonga was with them, too. The *shogas* were kept at a safe distance.

"Is it part of the magic?" Dra Vonga asked.

And, at Driggs' reply, she silenced the shouting green men and left with them in the ship.

But still the new ships left the red field before the firebreak was done.

RANCE drove the men then, and the crash of falling timber was an endless sound. Other crews followed and dragged logs and branches to the inside toward the field and piled other branches and brittle, resinous brush on top until the inner edge of the broad avenue was like a great fuse waiting only for a spark to change it to a line of fire.

Back of this the firebreak was cleared, but between this line of brush and the red field was a quarter mile of dense forest. The trees with shiny black trunks would each be a blazing torch; together they would make a holocaust of flame.

But the five ships were gone. Driggs and Fozan and the crews with their great shaggy work animals were tearing out the last section of forest in back of the mountain when the ships came back.

Driggs saw them when they were far off and snapped out orders which Fozan translated for the men. Then, with

Fozan and ten others, he ran up the winding trail which would take him to the ledge. This was the blow-off now. If they could wipe out the *karanas* and the green soldiers of Dra Vonga at one blow, then make a surprise attack on the temple—

He came out upon the ledge of black limestone and ran, following the black rock, around the circle of the hill, while Fozan and the ten came after, their bare feet making slapping sounds on the smooth rock.

Directly above the red field he stopped. Here was where he and Duvaaurier had stood; here they had seen the gray ship take off. Now five copery ships were landing.

They came in one at a time, sinking down cautiously, for the crews that Arkos had trained were not expert. But the first one to land had its port open, and a solid stream of muddy brown and black was flowing out of it when the last ship landed.

The stream from that first broke up and became little clots of dark color, then single units—beastly things that ran and leaped and at last were herded into a solid mass by green men with drawn weapons. The *karanas* could think—and be driven.

From Fozan and the others came low, moaning sounds. Until Driggs said sharply: "Bring the fire pots, Fozan! Quick!"

They ran farther along the ledge, Fozan and the others—naked, bronze-skinned men with red cloths about their hips. Then they headed back into the caves where water, trickling, had eroded the shale. They came back at once, and each was carrying a big earthenware jar that had once held wine made from strange fruits, in the house of Fozan's father. Now the jars were empty and dry.

Ten jars. But Fozan came with his arms filled with brush.

He threw it at Driggs' feet then took



And then, unbelievably, the whole top of the mountain was moving—slowly at first—then—the sweep of it was too vast and too swift for eyes to see.

hold of Driggs' arm and pulled at it. "Come," he said excitedly, "for I do not understand, and it is like a vine yet is no vine."

He ran back toward the caves, taking Driggs with him. And a moment later Driggs was looking at what was unquestionably a length of fuse.

It was white with a black thread woven through it. One end of it was lost back in the darkness of the caves. The other way it ran out across the ledge and, dropping, vanished under dry brush that had been piled above it.

Back on the ledge the ten Xandrians called out suddenly and pointed down at the *karanas*, down at the red plain which, about the ships, had become a living sea—a pool, swarming with unclean life. Driggs dropped the fuse and ran back.

He threw broken twigs and bits of bark into the jars. Then he knelt and struck a match on the side of a jar and shielded it with his hands. The match flamed, and the Xandrians drew back.

The dry stuff in the pots burned cleanly with little smoke, even when all ten pots were filled with fire. Driggs put in more branches, showing them how it was done, then again he gave orders which Fozan translated.

THE MEN OF XANDROS ran swiftly away, each man carrying an earthen jar from which thin ribbons of smoke trailed out. Nine men, carrying the fire magic, but the tenth stayed with Fozan and Driggs and dropped more twigs and broken bits into the pot.

Fozan said, "It is magic, Rance Driggs, but what can such little magic do against them?" He pointed to the field.

Driggs looked down, but he was looking at the base of the mountain where the forest began. The green roof of the forest was alive with writhing vines and waving leaves, but under them,

down at the forest's edge, a pile of brush had been heaped.

Driggs said, "They know their stations. They know where to go. Have they had time, Fozan?"

And Fozan, waiting, said at last: "Now! They are there!"

Then Driggs pointed down the slope, and the tenth man snatched up a pot of glowing coals and darted away, following a trail that vanished among the trees below.

Down on the red field the milling *karanas* suddenly spread out, as water spreads when a dam lets go. The green men had released them at a dozen points, and the flood of beasts poured through and changed to thousands of individual, leaping, grotesque things, crazed with the man scents that filled the air.

It was then that the first little cloud puffed up from the base of the hill, pulling other smoke after it into a straight column that rose and mushroomed and, all in one instant, changed to billowing masses of black, sooty smoke.

The man who had taken the fire magic down and had seen the little potful grow into a fury of flame burst affrightedly from the forest and ran toward them. Down below, the *karanas*, spreading, had almost reached the edge of the field; the foremost were vanishing among the trees. But now other smoke was rising.

It came here and there at points back in the forest about the field. It rose straight and changed to black masses, and the separate columns broadened and spread until they joined together and made a curtain of black smoke surround the field. And now the curtain was no longer black but sultry red.

At the foot of the hill, below Driggs and Fozan, the first fire was a solid wall of flame. It did not spread at once but swept up the hill, coming fast.

Driggs said in a low tone: "That's fine!" He was standing, leaning for-

ward, watching. "It'll come up the hill," he said. "It'll make a draft, pull the other in, sweep it across—all across the field."

Fozan shouted: "They come back! The *karanas*! See!"—and pointed at figures boiling from the forest around the field.

But Driggs came up from his half-stooping pose and looked off to the left above the smoke, off where the dome of Dra Vonga's temple still showed. Another shape was in the air there—the rounded gray bulk of a ship that rose and leaped into level flight and drove in fast toward them.

It swelled as it came, then vaulted the curtain of smoke and swept down. It landed beside the coppery ships, and from its open port came a leaping, green-skinned man.

It was Arkos. Behind him were others, a mob of them pressed tightly together. And at the center of the crowding figures were two dots of color, one red and one gold.

For a moment Driggs did not breathe. He said in a tight whisper: "Kitten! Down there!"

Then he flung quick words at Fozan.

XXI.

"GET BACK there with your men, back beyond the firebreak; this'll be hell in a few minutes!" Driggs was talking fast. "Take charge. Bring your men in after the fire's out and clean up on that mob. You'll have to do it. I won't be here. I'm going down—" Then he was flinging himself down the slope but running sideways to clear the oncoming flames.

An opening in the trees marked another path. He was below the fire before it had spread out to block him, but the heat of it crisped the hair on one side of his head as he passed.

He ran out into a pandemonium of sound. Barking shouts of the green

men of Grokara, the cries of the *karanas* fleeing from the forest but not yet back to the ships, and over all the sullen roar and crackle of flames.

Sunlight was gone, and the red field was a place of murky darkness. Smoke, spreading flat but still up high, had swept across; then, suddenly, the darkened field took on new color as the mountain at Driggs' back changed to a roaring furnace.

The flames spread swiftly and swept up the slope as they spread. They seemed to reach the top in a single leap, then came together and shot on up like an enormous flaming torch. Suddenly the still air over the field began to move.

The towering flames pulled it in. It swept toward the mountain from all sides, slow at first, then with hurricane force. Smoke came with it, and sparks, then flaming branches and furious heat—and with that the wall of flame about the field lay down flat across the intervening quarter mile of resinous forest, and its voice rose to a thunder of fury as it tore in.

Under it all Driggs ran. He passed green men who paid no attention to him but scurried futilely back and forth. Then he was beside the gray ship. He saw Kitten and Dra Vonga side by side against a clot of green bodies. Green men were still massed at their backs. And in front and at the right, Arkos waited with his ray projector in his hand.

Arkos' lips were drawn back in what was meant for a smile of triumph. He raised his weapon as Driggs ran up; then Dra Vonga threw herself between them.

The luster of her golden robe was dimmed here in this murky air. Smoke swirled down and stung in Driggs' eyes, but he saw that Dra Vonga was holding something in her hand.

She flung herself toward him with that hand outstretched. "Take it!" she

cried. "It is the thunder death! Save us!"

Driggs' own gun was in his hand as he flung Dra Vonga clear. He flipped up on the gun and prayed that a good shell was underneath. And, in the very moment that light flashed from Arkos' weapon, something struck Driggs and sent him sprawling.

The blow had hit his whole body. Arkos was down, too. Dra Vonga, Kitten, the green men—they were all on the ground.

For an instant, silence swept the field—silence, but for the roar of the flames. Then screams and barking calls and the cries of the *karanas* rose again.

Driggs scrambled to his feet. Arkos' projector was on the ground, and he kicked it away and swung his own gun once on them before he turned toward the mountain.

SUDDENLY he knew what this meant. The fuse! And there had been an explosion! But who had done it?

Stones were rattling down on the mountainside. They were still raining when a second burst tore upward from the black ledge halfway up the slope, and rocks and trees became part of a geyser that shot up and sprayed out in air.

Again the blast hit but less strongly this time. And then, unbelievably, the whole top of the mountain was moving.

Driggs was shouting as he turned. "Inside! Get in! Get in quick! It's coming down!"

Dra Vonga was nearest him; he pushed her toward the open port. He reached for Kitten and jerked her toward him, then he was at Arkos' side. He jammed his gun into the green flesh, and Arkos scrambled ahead of them through the port.

Driggs' voice was a scream as he shouted to make himself heard, for the voice of the mountain was rising above all sound. "The controls!" he told

Arkos. "Lift it! Straight up!" He turned, and two green men who had followed whirled and threw themselves from the port under the muzzle of his gun. But Arkos stood very still, staring out.

Driggs sprang for him and beat at his face with his gun. "Get up forward!" he ordered, but still Arkos did not move. Terror had gripped him, and he only stood while Driggs' heavy gun hammered at his face and the green blood oozed out and ran down and dripped from his chin.

Dra Vonga sprang to an opening in a metal diaphragm and was gone. She had run toward the bow of the ship and the control room. Driggs said, "If I only knew how—" Then Katharine was at his side, pulling down on his arm, and, after that, both of them stood as unmoving as Arkos and looked at the mountain that was coming down upon them.

It moved slowly at first, just the upper half of the mountain. It came toward the red field and seemed to disintegrate as it came. Then the whole mountain-top lost all shape and melted into a roaring cataract—and after that the sweep of it was something too vast and too swift for eyes to see.

A cataract—a pounding, thundering mass, rolling fluidly. It came toward them and fell, and the sound of it was not sound but something that beat upon them with terrible force. And the falling torrent was still fluid as it spread out and swept toward them across the field in a wave of red earth and black rocks and hurtling, flung-out branches of trees.

Then the wave was beneath them, and, miraculously, the ship was above it in air that shivered until winds took the ship and tossed it sickeningly. Driggs and Kitten clung to a metal cross bracing while the ship lurched and at last drove out and up.

It was on an even keel and only gen-

tly swaying when Dra Vonga appeared in the doorway of the compartment ahead. Driggs loosened his hold on the metal brace and walked unsteadily toward the open port.

Smoke clouds poured past below, but through rifts in the cloud he saw where the fleet had been and where now was only shattered rocks and a fan-wise sweep of clean, new earth. All but one of the ships had been crushed; only one rounded, coppery surface showed fifty feet of battered hull above the debris.

Driggs looked up where the mountain had been—at the flat, inclined top of it. It was almost like Tabletop now. Then, at last, he turned toward Dra Vonga.

SHE stood for a moment with her robe of some soft clinging golden cloth wrapped about her. She was breathing fast as she looked at Driggs.

"True pictures," she said, "were in the crystal. And, truly, an Earth man, by his magic, has saved Dra Vonga from great harm. This one"—she pointed at Arkos who stared insolently back—"turned against me. He led the green men of Grokara and made me his prisoner. But you have saved me. Now we will go back to the temple."

She turned and vanished then, and, a little later, the dome of the temple slipped past the port before the ship thudded gently. Silence was about them then, until, from somewhere ahead, a hissing sound led up to a ringing metallic crash as of some huge object falling. After that Dra Vonga reappeared.

She motioned Arkos ahead of her and followed him out through the port. Driggs, the instant that she turned, was dashing through the opening into the compartment ahead. He went through the next compartment and two more after that before he came to the bow of the ship. There he stopped.

Directly ahead of him was a metal table through which little levers projected. The controls were like those in Duvaudier's little ship, and it was the control board he had been looking for.

But now, ahead of the controls, where the blunt nose and forward look-outs should have been, was nothing at all. The end of the ship had been sheared cleanly off and lay like a huge broken eggshell on the pavement outside. A gleaming mechanism on a tripod stood at the point where the metal had been sheared. A violet light gleamed inside a tube, and that was all.

Driggs turned and found Kitten beside him. He touched her gently on the shoulder but said nothing, and she, too, turned. In silence they moved back and out where Dra Vonga waited.

Dra Vonga glanced at Arkos standing off at a little distance. She said, "Arkos will not escape now," and smiled very slightly.

Driggs' answer was low. "No," he said, "there won't any one escape now—or ever."

Beyond the open end of the ship and past the intervening forest, clouds of smoke were mounting into the sky; the under side of the heaving, billowy masses were red with reflected light. Dra Vonga said softly: "In the crystal it has been like that always. What comes now I have never seen. I know only that we two, with our magic, can rule. But the crystal has told me this, that you must come of your own desire. And if you do not—"

A little shudder passed through Dra Vonga then.

"Beyond that," she said, "I have not seen."

XXII.

DRIGGS and Katharine stood at one side while Dra Vonga talked to Arkos in the harsh, barking language of the green men. Driggs' clothes were torn

and stained; his face grimy and streaked with blood where a stone had struck him; the hair on one side of his head had been singed. Kitten, too, was disheveled. The remnant of her little red frock hung from one shoulder.

She looked up at Driggs. "How did you do it?" she asked. "The mountain—and the explosion?"

Driggs said dully: "I didn't do it. Some one else did. I don't know who."

Dra Vonga called then, and Katharine moved away.

Driggs said, "Don't——"

But Katharine answered in a low tone: "I am sure I would be *de trop*. If we are all to stay here——" She left the thought unfinished and walked away with Dra Vonga.

"You will wait in the temple," Dra Vonga told Driggs.

IN THE TEMPLE ROOM, he stopped just inside the entrance. Light from the opalescent dome above flooded down and made the solitary figure seem very small. He waited there in the silence and stared unseeingly at the floor.

He was tired. He did not know what was coming and could not care. The sheared-off end of that gray ship had meant the destruction of their last hope of escape. And now——

He was looking down. He did not see the first color as it came. But he heard the sound, then he looked up and saw the blue flames.

They came in the darkness. They began high up under the dome—pale, delicate flickerings that were almost colorless until a golden glow came at the center of them, and then the flickering flames were pale blue.

Sound came from them; the singing flames of Dra Tor seemed almost speaking, and their message was one of tranquillity and peace. The music stole into Driggs' weary mind and seemed to flow on through his whole body, while a re-

laxation that was pure bliss took possession of him. Then the flames expanded, and the sound grew with them.

Blue flames, edged with gold—and gold, shot through with blue. They merged with inexpressible loveliness into rich greens which changed again and were slashed by other lines; and the lines were never still but wove themselves into a deliriously bewildering pattern. And always they sang with a throbbing, sobbing sweetness in ever-changing harmony as intricate as the pattern of colors.

At the last was a single curtain of flame that reached from floor to highest dome and spanned the full width of the temple—a shimmering, quivering curtain. And a single chord of sound came from it and held on and still on, until billowing clouds of blue, so dark as to be almost black, rolled up from below.

And with that came the full-throated crash of the bass in a roaring volume of sound that drove Driggs' blood until it, too, seemed crashing through his veins.

He could not look away, and he was drunk with color. While, under the onslaught of sound whose very beauty was unbearable, every nerve was vibrating. It was too much; he had reached the end of his endurance, when, through the thundering bass, a thread of melody pierced—a lilting refrain, so sweet, so entrancingly lovely that each nerve relaxed. The melody sang tremblingly up and up.

Fading, the thundering bass became the merest echo of sound, and there was left only the seductive, bewitching beauty of that one lilting melody that held him breathless.

He was waiting and did not know for what, but the air vibrated with expectancy. Then, from the heart of those deepest dark-blue flames, Dra Vonga stepped and stood in utter immobility.

Slim and beautiful, she stood against

the pulsing blue; and, high above, the shimmering curtain changed to golden flame that shone down caressingly upon her.

Always the melody went on, though it swelled and died and came again and mounted higher. And, at that, the glorious figure came slowly to life.

Dra Vonga raised her arms. She was looking toward Driggs, reaching toward him. And again her dark-lashed eyes were softest violet, deep pools of promise. Her scarlet lips trembled. Her voice, deep in her throat, was calling.

"Come," she said. "Of your own wish and will, and because it is Dra Vonga who calls, come——"

And Rance Driggs moved slowly forward.

HE WALKED STIFFLY, like one in a daze. He did not feel the touch of the floor beneath his feet. He saw only Dra Vonga, glorious, irresistible, the incarnation of beauty beyond believing. In all the heavens and the whirling worlds they held, there was for Driggs, in that moment, only Dra Vonga—and a song, wildly sweet, that wove itself into his mind and filled him and left no room for thought.

Out of the dark-blue flames the roaring bass returned, and now it carried the melody, while that higher singing tone, too beautiful for a voice, changed to a call of utter passion that struck like lances of sound through the roaring melody below. And the thunder of that bass was something that took Driggs' whole body and held it while that wild refrain from above shot through him.

He was close to Dra Vonga now. She was standing on the platform's very edge, just above him, so near that the perfume of her body seemed part of the music. He had only to raise his arms and all this radiant beauty would be his.

He knew it. He was lifting his arms when a new sound struck through. Then discord was where utter harmony had been—for somewhere, at some vast distance, a woman had sobbed.

It pierced through all other sound and reached down inside of him and tore at him. Even the bass could not drown it out, although the thunder of those dark flames battered upon him. Driggs heard. He even heard the voice that came after and knew it was Kitten's voice.

"Rance——" Kitten said, and that was all.

Above the roaring bass a soaring song in lilting, golden strains broke sharply and became a cry of pain. Or was it Dra Vonga's voice that had uttered that sharp cry?

But that first sound had been Kitten's voice, and, suddenly, the madness that possessed Rance Driggs was gone. He looked back. Far across the room in an archway stood Kitten. Then he looked up at Dra Vonga, and his hands dropped back at his sides.

He breathed deeply in new freedom, for the last allure had left. She was only another woman. And back there, across the room, Kitten was waiting.

He looked down at the floor then, and after that he turned slowly and walked away.

Sounds beat about him, discordant, jangling sounds, and he never heard them. He walked back to Katharine Putnam and held out his two hands. He said, "I was going down for the third time. Can you ever understand?"

She said quietly: "Of course I understand," but made no move.

"But," Driggs went on, "it's you I love. I've known it from the first—but I couldn't say anything until I had got this other straight."

Kitten said, "Don't! I do understand!" Then she flung herself into his arms, and her own arms went about his neck and clung. "Rance! Rance!"

she sobbed. "I can't stand any more. What are we going to do?"

He held her then with both arms about her, but, slowly, they both turned and looked toward Dra Vonga.

She had stepped back, but now she stood leaning forward, and the blue flames came up about her and made a shimmering of light. Her face was pale as if every drop of blood had drained back to her heart. But her eyes were hot with fury.

She said, "The crystal did not show this, Rance Driggs. Neither did it show the death that you and Kit-ten will die. But first you will be like Dra Tor—shriveled, and ugly, and horrible to see."

She straightened abruptly then, and a change had come to the shimmering blue about her, though what the change was Driggs did not know. Then her eyes opened wide with terror, while her lips parted, and she flung up both hands.

"The flames!" she cried. "They burn! They burn! It is the lost magic of Dra Tor!"

Her arms were still uplifted. There was no time even for a step. For, in one instant that held Driggs and Katharine transfixed with horror, Dra Vonga's creamy body changed to white flame that tore upward in a single straight line and left below it, at last, only something charred and black that toppled to the floor.

The flames were roaring now with a new voice, and where there had been only blue was now sullen reds and yellows and sharp, vivid tongues that were true fire. It thundered upward with terrible speed; the whole end of the temple was ablaze, all in one moment, for the flames rose on a fearful blast.

Smoke went with them, billowing out under the dome. And, suddenly, heat that was unbearable flashed upon the two who watched and drove them before it.

Driggs had Kitten in his arms. He was holding her so that his body was

a shield as he ran at full speed toward the arched exit, while back of him the temple of Dra Vonga changed to an inferno, where flames soared upward and timbers of walls and roof became fire with explosive suddenness, before they loosened and crashed down.

HE still carried her as he raced out through the corridor, across the bridges, above blue lagoons and on through the circular buildings. And, at last, the exit was ahead where the sun was shining on the plaza outside the temple.

He could even see the gray ship and the broken end where Dra Vonga had destroyed it; then he was outside, at the top of the steps leading down to the pavement. He stopped there, and almost let Katharine fall, for his arms were suddenly limp. He was looking across the pavement at another ship, a little, rusted, weather-worn craft, and at the man who stood beside it.

For a moment he could only stare, while his eyes burned; then he swallowed hard, and his hands still touching Katharine trembled.

He said, "Duvaurier!" but it was only a whisper. Then he shouted it—"Duvaurier!"—and reached for Katharine's hand as they ran, in the same instant, down the steps.

Massed at some distance from the ship were green figures. Arkos' scarred face showed among those who stood, but five others lay on the pavement in front of them. One of the crumpled figures raised up and screamed once before it fell back again.

Duvaurier, standing beside the ship, was aiming a pistol at the green men, but he called over his shoulder to them. "Come quickly, m'sieu!" he said. "They can use their ray guns if they are closer, and my pistol is empty!"

Perhaps Arkos understood. Or it may have been only the sight of the two who ran. He started forward at the sound of Duvaurier's words, and though

the others hung back he hurled himself in giant strides across the plaza toward the little ship. He held a ray projector in his hand, and the white metal glinted as he ran.

But Driggs was tugging at his own gun. He pulled it from its holster without slackening speed, then stopped and swung up on it as Arkos aimed. The gun jolted back satisfyingly in his hand.

Again he ran with Kitten beside him, until Duvaurier, whose face was chalk white and glistening with tears, was crying to them: "Tell me, m'sieu', is she—is she—"

Driggs stopped and held Kitten swaying at his side. He said gently: "Dra Vonga is dead"—then he gripped Kitten's hand hard and followed where Duvaurier stumbled blindly into the little ship.

XXIII.

SPEED. Always speed. With three tiny cylinders brought together and aimed forward so that all the pull was ahead. Constant acceleration pressed them back against the rear wall of the tiny forward compartment, while they strained their eyes ahead in the direction of travel.

And out there a star changed at last to a globe, although before that time the cylinders had swung back until, after a time, the globe seemed beneath their feet. And, at last, continents and seas lay below them, and the little ship was driving in on a long, easy slant toward a feathery cluster that changed to enormous cloud masses as they drew near.

Then, with Driggs saying nothing because his throat was too tight, but only standing and pointing, Duvaurier said, "And now I will tell you and mademoiselle what occurred—"

"This is my second return to Earth. Once before I came here, after leaving you on Grokara, and as now I was

on fast time. I went to where I knew would be explosives for already my plan was made. But I only intended to drop them like bombs.

"Back at Xandros, I crept in on the darkened side where only Grokara shines; then, flying above the forest, I came on as near as I dared and landed and hid my ship. But first, from high above, I had seen what you were doing, *mon ami*, and I comprehended the plan. So I added to that plan.

"I placed my explosives in the caves on the mountain and laid a fuse to where your fire would reach it, thinking that the stratum of blue shale, once disturbed, might be a lubricant—"

He stopped and flung out his two hands.

"Check," Driggs said. "But about the temple?"

For a moment Duvaurier's face went dead white. He licked his lips and looked ahead through a forward port and did not turn.

"From on high," he said, "I saw you land and saw the sabotage of the ship. Then I dared to come down. I knew another way to the underground room, and I went there, not knowing what I would do but wishing to help.

"I found there, Dra Tor. He was the shriveled one, the little mummy, but I remembered him. He did not die, it seems, but must have been caught in his own flames."

Duvaurier paused then and glanced at his own hand that had felt the same withering touch.

Driggs said, "O. K. She said—I mean I had guessed that."

"Yet," Duvaurier continued, "though Dra Tor's mind was gone, he still could play the music of the singing flames. He was moving his hands through many bands of colored lights when he saw me.

"Then—was it fear—or a return for a moment of sanity? I do not know. But Dra Tor leaped to where other lights shone on a broad disk, and he

changed those lights, and there came the roar of fire, and I saw above me many hot blasts that ate through the ceiling of the room—like that! So I turned and ran and waited outside."

He had been talking fast. Now he stopped and again passed his tongue over his lips, and his hand on a little lever trembled. "And she?" he asked. "Was it the flames?"

Driggs nodded. "Instantly," he said. "She never knew."

BLACK MOUNTAIN was ahead of them, and the ship was settling slowly down where Driggs had picked this one peak from a vast, far-flung mountain empire. He could even see the clearing and here and there a part of the trail. It was all unreal and entirely unbelievable, but, at last, they were directly above the clearing, and the ship had no motion except the trembling that came with the soft rumble of a motor that drove a generator and sent the current through Duvaaurier's wonderful gas.

Katharine, looking down through a lower port, gave a startled exclamation. "There's nothing moving!" she said. "It's all standing still!"

Almost under them was the corral. The horse was there, and the big roan had one foot raised and his head flung high. Wreckage was strewn across the clearing, and just outside the corral a fox made a brown blot of color, and its eyes gleamed. It, too, stood still.

Only after a moment was motion to be seen. Then the horse's one foot was sinking down, and another one raised slowly; and the fox also moved and drew gradually away from the fence.

Duvaaurier had opened the little port and was lowering a ladder of rope with wooden crossbars. He said: "I will not land, for to contact the Earth would change the vibration of me and the ship and all that is in it. Our magnetism, I think, would be discharged."

Driggs said, "You're not landing! You're not coming back!"

Duvaaurier looked away. He said slowly: "I have destroyed the only woman I ever loved. What is there for me here? I prefer to stay in the vibration of that new time which Dra Tor created and which *she* used."

Then he looked up at them and smiled quickly, but his eyes were wet. He touched Driggs' shoulder with his one good hand, then reached and took Katharine's hand and bent and kissed it.

"Do not forget Duvaaurier," he said. "And—who knows—it may be that some day I shall return? But go now. Go back. But do not forget, though in a moment it will be to you as if Duvaaurier had never been."

They went down the swaying ladder, Driggs first, reaching up and steadying Katharine. Then he waited until she was beside him, and, in the same instant, they took the last step down to the ground. And in that instant the whole world came to life.

All had been still. Now alders, at the clearing's edge, were flickering; the wind came and touched them and blew the ragged edges of Katharine's dress and lifted her brown hair away from her face. The big roan dashed madly for the far end of the inclosure, screaming with fear. While the bit of color that had been the fox flashed in a straight line across the clearing and vanished into the woods.

Driggs drew a long breath and looked at Katharine, then both of them raised their faces and looked above where the rusted ship had been. But now there was only the blue of the Sierra sky and a few fleecy clouds drifting.

"In a moment," Duvaaurier had said, "it will be to you as if Duvaaurier had never been." And already it was unreal.

But Katharine Putnam laughed in a shaky voice and looked down at the tattered remnants of her red frock.

"Rance——" she said. And again, "Rance——" but could say nothing more.

ANOTHER VOICE came before Driggs could speak; it came from the head of the trail in the familiar drawl of Ed Putnam's voice. "What?" Ed Putnam was asking, "was that noise I heard? 'Twas kinda like thunder, but—well, if you two ain't a sight!"

He came out from among the big pines and stood looking at them and at the clearing. He was tall and lean, and his long face seemed longer when he was open-mouthed and with his jaw fallen.

He said: "You will keep dynamite in your shack, will you! But you're alive, both of you. Gosh, I had a presentiment a couple of hours back when Kitten went mooning out of the lodge and started off up——"

Driggs broke in sharply. "Say that over again!"

"What do you mean?"

"Say it again. I want to see if I got that right. You said it was two hours ago——"

"Sure, it wasn't any more than that."

Driggs said, "Two hours!" and waited and looked down at Katharine who looked back. "And it took you half an hour to get up to Tabletop, Kitten; so it's only been an hour and a half since then——"

Kitten was looking at him. She said, "I don't in the least understand. But, oh, Rance, does it matter?"

She still looked up at him, and her eyes were aglow with a light that Dra Vonga's eyes had never known; the eyes of a woman who gives with no thought of asking—eyes of love. Her face was flushed; her lips trembled.

Driggs opened his arms—and, when he had her close, bent down. He said: "Now it's this that's like a dream. But this is real, too."

He kissed her then, on the lips, while she clung to him. "There isn't anything else that matters," he told her.

THE END

NEXT MONTH:

ENTROPY, by Nat Schachner

A great science-fiction novel.

Redemption Cairn, by Stanley G. Weinbaum

The latest and greatest of his novelettes.

Outlaws of the Stars, by Stanley Wade Wellman

A novelette by an old favorite.

CONES

*A tale of force which
science could not fathom*

by Frank Belknap Long, Jr.

HE had never seen such skies. Glory beyond bright glory, wonder beyond wonder, unfurled and unfurling in the black celestial vault above him. The Earth and the Moon were the brightest of all bright stars. Outshining even the first-magnitude suns in the immeasurable galaxies which spanned interstellar space, they circled about each other, displaying in their wheeling courses home fires sheathed in sky flame.

Venus was a tiny green moon swinging across this field of glory, and the farther planets, which shone as stars, turned fully illumed faces toward the man from Earth.

It was night on Mercury—night in a world of day and night. Across a thin strip on the surface of the Sun's nearest neighbor there occurred the familiar alternations of sunlight and darkness which Gibbs Crayley knew and loved. The liberations of the little planet, which rotated only once on its axis in its swift journey about the solar disk, had conferred a precious boon.

Revolving at an uneven rate over an orbit of extreme eccentricity, with wide variations at perihelion and aphelion, it sometimes lagged a little in its rotation, and sometimes got ahead of schedule. This divergence splashed sunlight over on its dark face, and brought alternating night and day to a narrow strip of its hoary crust.

Thus, the man from Earth had experienced the precious solace of light change, of brightness after a period of shadows and of cold, comforting darkness when the solar glare with its deadly, short-wave radiations became intolerable.

They were longer days and nights

than he had known on Earth in the days of his youth, but glorious all the same. A man could live here, stand upright and walk with springy step. Incased in a flexible, metallic space suit surmounted by a nonflexible helmet, with fifty-pound weights attached to his thighs and an oxygen tank strapped to his shoulder, he could survive.

On the thin strip which did not exceed two thousand miles in width at any point, the conditions of climate and temperature were sufficiently stable to support intelligent, incased and guarded life. On all the other portions of the planet there reigned scorching heat and a cold that froze all known elements solid.

On the dark face the cold frequently fell to within a few degrees of the absolute zero, and on the bright face the sun shriveled the mineral face of its little progeny. Ten times as hot as the sunlight of Earth, the solar radiations blighted and blasted every alien shape of protoplasm. The dark face was infinitely bleaker than Earth's antarctic wastes; the bright face hotter than the sands of the Sahara.

Gibbs Crayley was a social exile. He had experimented too audaciously, with germs, on Earth. Rawboned and ungainly, with a rough-hewn, tremendously kindly face, he looked in all respects the opposite of Faustian. But a kind of Satanic detachment dwelt within him. He was at once fervent and cold—and a little dangerous.

He had saved more lives than he had lost through his daring medical innovations, but his ruthless audacity in the sphere of bacteriology had encountered public hostility on Earth. In response to official pressure and the sting of his



Gone was the horror now. It had been burned away by the white fire of a consuming curiosity.

own scrupulous conscience, he had exiled himself.

He had become a space explorer, an adventurer of the skyways. Mars and Venus and the dark Plutonian wastes had known his stride, and he had descended into the lunar craters, and collected incredible flora from the meteor-pitted plains of a tiny asteroid far out in space.

The great space ship of cobalt glass gloomed in the star-studded night behind him. Looking back, he saw an immense, melon-shaped mass flecked with Venus light. Beside him walked Mona Massin, who was too beautiful for Earth. Mona Massin was as cold and as fervent as Gibbs Crayley.

Mona was cold to men who pursued her ceaselessly, and fervent when the fabulous glories of far planets beckoned her. The twenty-three-year-old American girl was an astronomer by birth and choice, and to her the disciplines, exactions and rewards of scientific research were the whole of life. On Earth, men pursued her, but now, in the cold, star-hung Mercurian night she walked beside a man too dangerous for Earth, and was unafraid.

MERCURY was still unexplored. Earth colonies mushroomed into magnificence on the Venusian plateaus and the rust-red deserts of Mars, but Mercury's proximity to the solar disk had hitherto discouraged all attempts at colonization.

There were these two—and six others. All were citizens of the United States with the exception of Girolamo Lorenzo, the Latin biochemist, who was back in the huge space ship recovering from a severe illness. Intrepid Earthfolk, suicide battalion people, walking slowly in their suits of flexible difrolchrome, weighted down with high-frequency coils and oxygen tanks and thigh-weights, and living, from instant to instant, dangerously.

Here was high adventure indeed.

Awe and alienage weighed heavily upon them as they advanced, but the heavens brought splendors that eclipsed the star pageants of Earth's night skies; and the plain over which they moved sent stimulating little shocks up their incased bodies. The red metallic soil was electrically surcharged, and at night it glowed with a faint, reddish phosphorescence.

In the vicinity of the space ship the terrain was level and flat, but far in the distance high peaks reared. With only their flash lamps to guide them, they moved cautiously, testing every step with electro-dynamometer-tipped staffs to avoid the shock patches.

A misstep in that alien realm and a man would crumple and his body sear to a crisp within a blasted space suit. Fortunately, the dangerously surcharged patches were scattered and infrequent.

Mona's cat had stumbled into one and its pathetic little body was now a charred cinder under the bright Mercurian skies. Mona's Persian cat whose large green eyes had thrilled Mona with hints of strangeness and whose wilful playfulness had delighted every one.

Crayley had made a little space suit for it equipped with oxygen tank and weights, and it had followed her across the dark crust, the only feline quadruped ever to tread so near the Sun. Now it was gone—a crisp.

Mona walked next to Crayley, and on her right walked William Seaton, an engineer from Vermont; Parkerson, a middle-aged biologist; and a tall, gangling youth of twenty-two named Fred Wilkus, who hailed from Texas and excelled in the art of cookery.

On Crayley's left walked Tom Grayson, a metallurgist with sand-colored hair and a twelve-cylinder mind; and young Allen Wilson, an associate member of the National Biological Institute, and instructor in invertebrate paleontology at Boston University.

The explorers intended to cross the

habitable strip to the extremity of the dark face. It was their first long trek. For two weeks the great space ship *California* had lain in a natural hollow in the red metallic valley, under skies that blazed through an atmosphere of unbreathable gases by day and shone frostily by night. And for two weeks the little human voyagers had been faring forth for perilous momentary inspections of that cold, bright, new little world.

They had early discovered the electromagnetic quality of the crust, having tested it with galvanometers, galvanoscopes and electrodynometers, till the full strangeness and menace of the phenomenon were apparent to all.

Parts of the soil were feebly surcharged, parts seemed to harbor currents in the magnetic field that did not register predicably on any of their instruments, and in patches there was a voltage sufficient to rock a mountain. The shock patches, they called them, and avoided them as they would have avoided plague quagmires on Earth.

There was no flora on the rust-colored plain which harbored the space ship. Slightly luminous dust and tiny rounded pebbles covered a solid substratum of crust that was as malleable as some soft metal, but infinitely more resistant than the soils of Earth. This crust was also rust-red in hue and unmistakably metallic, although the specimens which Tom Grayson examined revealed the presence of at least two elements unknown on Earth.

There wasn't much light on the planet's crust. The tiny Venus moon cast a greenish glow, and the constellations, which were brighter than all the blue-and-orange giants in the arch of Earth's skies, contributed brighter starlight than Crayley had ever known. Yet, despite this celestial fanfare the darkness was only faintly relieved by nebulous outlines that wavered and engulfed the little band.

BEYOND the goggle-eyed helmets of their space suits surged air, tainted with heavy gases and ionized by cosmic rays. Crayley was thankful for the oxygen which surged behind the goggles and, as he moved over the unpredictable terrain, he altered the release gauge on the tank strapped to his shoulder by two degrees. He knew that as the flow diminished he would breathe less freely, but oxygen here was more precious than water on the deserts of Earth, and he could not afford to squander it.

He turned his head and gazed with disapproval at the girl by his side. "No place for women," he mused. "Perky little fool, that's what she is. Getting hysterical because her blamed cat got singed. Probably her idea is to have a swell time getting plastered on oxygen while we're getting blue in the face on emergency rations."

Mona Massin hadn't moved her gauge one little bit. It still stood at a luxury level. At imminent risk to himself Crayley raised his electrodynometer-tipped staff and whacked her oxygen tank loudly.

Within the goggles of her helmet, Mona's eyes flared. She wanted to raise her staff and hit back, hard. She knew what he was trying to convey. But she had plenty of oxygen, enough to last until they reached the frozen face, turned around and trekked back to the *California*. He was just trying to humiliate and annoy her.

Suddenly, she obeyed her impulse. She actually raised her staff and swung it toward Crayley's incased form. As the wand of metal swung toward him Crayley jerked violently and his huge body stiffened. His electrodynometer had recorded a mountain-moving charge in the patch of illumed soil before him.

As Mona's staff whacked against his shoulder he swooped sidewise, caught her about the knees, and carried her swiftly backward in a running tackle. The man on Crayley's left, not under-

standing, stepped forward into the shock patch. For some inexplicable reason his own electro-dynamometer had failed to register.

One second he was stepping confidently forward into the illumed semicircle cast by his electric torch, the next only a part of him could be seen waving frantic hands in the Venus light. There was a burst of flame that blotted out the stars. The lower portion of his body shriveled, was consumed.

Like a dry leaf in a blast furnace, young Grayson's limbs withered into inert ash with a faint, hissing sound. The upper portion of his body came down with a horrible thud on the soil and a scarlet banner swiftly widened at the feet of Parkerson, Seaton, Wilkus and Allen Wilson.

For an instant, the four men were too appalled to move. Gazing through their goggles at the hideous spectacle of a limbless torso, space suit blasted away, spinning upright on a red field, they experienced a caustic kind of horror. Light spiraled from sandy hair galvanically extended. Faster and faster spun the body and then—flame mercifully engulfed it.

Crayley helped his companion up, threw his right arm about her shoulder to steady her. She flung him away from her, stumbled to the edge of the shock patch and was caught and held by Fred Wilkus. There was no attempt at communication. Messages in sign language could have been exchanged, but weren't. They moved on almost instantly to avoid funk—like aviators going up a second time after a crash.

The three young men and Parkerson fell into line with Mona and Crayley. They were the leaders, these two, however much they appeared to dislike one another: Mona, too beautiful for Earth and Crayley, too impersonal and ruthless. With slow steps they resumed their journey into the dark Mercurian

night, with only their torches and metallic staffs to guide them.

II.

IT WAS nearly an hour after the horrible galvanic accident, when Gibbs Crayley stopped suddenly in his tracks and stared through his goggles with wide eyes. On the torch-illumed semicircle of soil before him something had moved. Mona saw it, too, and she threw out her right arm, gently shoving back the two beside her.

Only Fred Wilkus on Crayley's left moved forward into the region of dubious stirring. He did not recoil or shrivel, but stepped right through it and continued to test his way with his staff on the level terrain beyond. Observing this, Crayley and the others knew that it was not a shock patch which confronted them.

But they were less confident than Wilkus. They hesitated before advancing, their four staffs meeting experimentally above the region of the stirring. Only the sand had stirred. As though blown by a faint breeze, the fine particles of metallic dust which covered the surface stratum had assumed a grotesque and nearly symmetrical pattern beneath their extended staffs.

Crayley knew that there was no breeze. The weather needle on Mona's helmet did not even vibrate. He raised his gloved hand and made signs in the torchlight.

"Something moved there," he conveyed with his fingers. "Invisible energy, perhaps. Watch; be careful."

They advanced again, less confidently. Three yards ahead of them Fred Wilkus was smiling cynically within his helmet. "The cautious old fool," he ruminated. "I can't figure what Mona sees in him. He has to test everything. She says it's the scientific temperament—I'd say, plain nuts."

It was the last thought that ever

stalked the corridors of his brain. A little to the right of him, a bright, purple light flashed in the darkness. A scream was wrenched from his twisted mouth behind his goggles. His arms wrapped themselves about his body; his testing staff went clattering. The light moved nearer, hovered for an instant above him.

When Crayley picked him up he seemed as light as Mona's little charred cat. The body within the space suit had become a husk of flabby flesh over projecting bones. Crayley's scalp tightened. He seemed to be holding a nearly empty suit, and when he flashed his electric torch on the goggle-eyed helmet he saw beyond the quartz a face that seemed almost a skull, two eyes that shone with the light of idiocy, and a mouth that drooled.

He flashed off the light, and stood, for an instant, in nearly total darkness, holding the awful burden. The others were coming toward him, swinging their torches in wide arcs. An ordinary man would have cried out, or sobbed in terror. But Crayley merely snapped off the light so that he could think more clearly. The thing staggered him, but he did not experience fright.

Mona was the first to reach his side. She splashed torchlight over him, over his burden.

Her gloved hand went up; her fingers moved. "What happened? An electric patch?" she conveyed.

Crayley's helmet turned slowly in negation.

"Then what?"

Crayley's fingers moved. "I don't know. I saw a bright flash, and he went limp. Look here."

He snapped his flashlight on again, focused it on the goggle eyes in Wilkus' helmet. Mona peered, and cried out involuntarily. A drooling, idiot face looked at her, with eyes that were viscous and uprolled.

Crayley's fingers conveyed: "We

can't go on now. We've got to get him back to the ship, quickly."

The others came up, clustered about the tall scientist and his limp burden. Mona's fingers explained: "We've got to go back. Wilkus is horribly injured."

Parkerson was the first to grasp the urgency of the situation. He stepped to Crayley's side and took part of Wilkus' weight upon his shoulders, although it was so negligible that Crayley could have borne it alone. Mona drew the two young men back into line, and with leaden hearts the entire party retraced their steps on the dark plain.

Imbued with abnormal caution, they now swung their staffs in wide arcs before them, but they did not encounter any shock patches until the vast, gleaming bulk of the *California* loomed in reassuring relief against the sky. Then Mona's electrodyneometer recorded one about five hundred feet from the stern of the great ship, and the party made a cautious circuit about it.

A MOMENT LATER, they were ascending a gleaming ladder over a curving surface of cobalt glass. As they surged upward, Crayley and Parkerson struggled painfully to keep their burden upright between them. They crawled beneath enormous hatches, and down another ladder inside, and along a short corridor that blazed with cold light lamps. Crayley threw a switch at the end of the passage and the crescent-shaped hatches descended and fell into place with a sharp, metallic clang.

They went down still another ladder and emerged into a longer and wider passageway lined with circular, metal benches with cylindrical legs. Crayley gently eased down his burden on one of these and sank down beside it with a relieved sigh. Mona seated herself opposite and fumbled with the screws of her helmet. Across from her sat Parkerson, and beside her young Seaton and Allen Wilson.

Parkerson was watching her within his helmet. He had eyes only for her. Despite the limp horror that rested on the bench beside him he had eyes only for the woman who was too beautiful for Earth.

Crayley got his helmet off first. He lowered it swiftly to the bench and stood up. For an instant, his gaze swept the three men and the one woman and the thing beside him that was no longer moving. Then he unstrapped his oxygen tank and thigh weights, and wriggling out of his suit deposited it in inside-out disarray on the bench beside Parkerson. Sweat gleamed on his pale brow.

Parkerson's helmet came off next, then Mona's and Wilson's. Young Seaton's face was as white as the Venus moon's when it came into view. There ensued further emergements, gasps and grunts in the cold, lamp-illumed passageway. Every one was looking at Mona. Every one wanted to be sure that Mona was all right before the limp suit yielded a shape of horror.

Mona stood with her helmet in her hand, staring with frightened, anxious eyes at the limp man, and, for the first time in her life, indifferent to all else. Only Crayley ignored her. He had glanced at her anxiously for an instant, but now he wasn't observing her at all. He was nervously engaged in unscrewing the helmet of the injured man.

The helmet was lifted off to the accompaniment of divergent reactions. Parkerson's features contracted and his teeth clamped down over his lower lip. A low moan rippled over the teeth of white-faced William Seaton. Allen Wilson simply threw his arm before his face and sank down on a metal bench.

Crayley's eyes blazed. Hastily, with tremulous fingers, he stripped the space suit from the stricken man. Wilkus' shrunken, white body was a ghastly, pitiful mockery of the human form.

Mona saw the shriveled body, the drooling, idiot face moving, jerking

about on the bench. She saw the empty space suit on the floor, and glanced swiftly in turn at each of the silent men—Seaton and Wilson sitting appalled on the benches, Parkerson staring in horror, Crayley staring with tight lips and shining eyes. For fully ten seconds she stood without a sound, staring too. Then she crumpled.

III.

WHEN she opened her eyes again she was lying on the berth in her own cabin. Parkerson was standing at the foot of the bed, staring down at her. She couldn't recall, for an instant, where she was, what had happened. Then the pitiful, hideous memories returned, flooding her brain. She sat up with a little cry.

Dr. Henry Parkerson had eyes only for her. It was shocking and disturbing, at such a moment. He moved to the edge of the berth, sat down and took her small hand in his.

"Frightened, child?" he asked.

She looked at him. "No—not frightened. What has happened to Wilkus?"

Parkerson avoided her gaze.

"Tell me," she insisted.

"He died," said Parkerson.

Mona was relieved. The strained look went out of her face, and she moistened her dry lips with her tongue.

"I'm glad, she said. "I am not a sentimentalist."

"Crayley is an inhuman beast," said Parkerson, in an embittered tone. "While Wilkus was still alive he took him to the laboratory and——"

Mona's face grew strained again. "Yes?"

Parkerson shrugged. "How do I know what he did? Killed him, perhaps."

Mona moved swiftly to the edge of the berth, gripped the metal leverage rail which ran parallel to the pillows and

descended to the floor. "I am going to him," she said. "Where is he now?"

"He is still in the laboratory," said Parkerson.

He placed himself squarely before the door.

"Mona," he pleaded. "I must talk to you. You don't even realize how much I adore you. You are so lovely that just looking at you is a torment. I'm afraid poor Lorenzo is cracking up. He's been brooding, torturing himself——"

"It's just his Latin temperament," said Mona coldly. "It's just the influenza wearing off."

Parkerson shook his head. "It's you, your great beauty. It has turned the heads of every one on this ship. I don't know why I'm pleading Lorenzo's case when I'm desperately in love with you myself. Mona, I——"

Mona looked at him steadily for an instant. The contempt in her eyes was blighting. "You are a sentimental weakling," she said. She took his arm and simply pulled him aside. As she slipped through the sliding metal portal she saw his shoulders sag. She felt both contempt and pity for him.

Crayley and she understood one another. At least, she understood Crayley. An impersonal flame consumed him. Never was a man more detached, more passionless. Love to Crayley was a sickly flame in a barren land, which tarnished the bright glow of wisdom's lamp.

SHE found him beside the withered body of Fred Wilkus. He raised his eyes and scowled when she entered the laboratory and shut the sliding door behind her. She walked toward the table where the dead man reposed beneath a rubber sheet.

"Parkerson told me you found it necessary to kill him," she said.

Crayley looked at her. He had always thought her a rash little fool, but he had to concede that her impersonality

matched his own and was really magnificent.

"At least we are capable of mercy," said Mona. "The others are callous, sentimental barbarians who delight in suffering."

Crayley's scowl increased in volume. "Don't be so grandiose and self-righteous," he said. "The others were conditioned from birth in a sloppy, sentimental tradition. No man is responsible for his conditioning."

"But you did kill him."

Crayley shook his head. "I didn't have to send him out mercifully," he said. "He died before I could etherize him."

"What did you find?" she asked.

"Something rather horrible, Mona—— horrible, and incredible."

On a white-topped table behind him a lamp was burning. Its intense flame cast a flickering radiance on a number of surgical instruments arranged in rows, test tubes in a metal rack, and a pair of discarded rubber gloves. Obviously, Crayley had concluded his examination. His hands were bare; the ether cone with its massive base of bellows had been wheeled into a corner of the laboratory, and a rubber sheet covered the still form of Wilkus completely.

But Crayley was eager to share his discovery. He knew that Mona had an appreciative mind. Her mind was really the only thing about her that appeared to fascinate him. He said suddenly: "I'll show you, Mona."

He stepped to the table and removed the sheet. Mona turned pale. The body of Wilkus was rigid and blue—it had turned blue all over. It looked as though it had been poured on the operating table. But Mona wasn't going to faint this time, if she could help it. She gnawed at her lower lip and dug her nails into her palms.

"He should have died out there," said the calm man beside her, gesturing with

his hands. "His vitality seems to have been tremendous."

Mona said: "It's ghastly, Gibbs."

Gibbs Crayley scowled. "So is all life, Mona. Here, and on Earth. Ghastly, or very great. When we penetrate beneath the surface cruelty, the essential parasitism of nearly all living forms, we uncover a base of sublimity. I mean, life everywhere is so stupendously complex, so unpredictable, so——" He shrugged. "But perhaps it all came about by chance, even the strange and utterly alien life forms that must exist here."

He had put on his rubber gloves again, and was gripping the base of the burner. While Mona watched, horror-struck, he raised the flaccid, bluish hand of the dead man and moved the burner toward it.

"Look, Mona," he said.

The intense blue flame enveloped the hand of the corpse as far as the wrist. The flame flared, shot out fiery jets of radiation that looked like miniature replicas of the solar prominences. It turned greenish, then purple, then blue again. It swirled in fiery billows about the limp, flabby flesh—coruscated, soared and subsided, as Crayley moved the burner here and there over the lifeless member.

"That hand has been dipped in hydrochloric acid, dilute solution," he said.

Mona's brow was furrowed. Gone was the horror now. Like the vestigial stirrings of terror in Crayley's mind, it had been burned away by the white fire of a consuming curiosity.

Crayley turned to the table again, picked up a thin glass slide with his gloved hand, held it before the fire-ensheathed flesh.

"Look through that glass, Mona," he commanded. "What color do you see?"

"Yellow," said Mona, in a hushed whisper. The wonder of it was breaking all about her in crackling waves.

"Only the faintest tinge of orange in

the flame," he said. "And when you view it through green glass it looks yellow, not green, as it should."

"Then there's no calcium at all," said Mona. "No calcium even in—in the cells of his body."

Crayley nodded. "Apparently not. We know that when calcium compounds are moistened with hydrochloric acid they turn the Bunsen flame deep orange. Strontium also turns the flame orange-red, which often conceals the characteristic calcium glow, but strontium shows yellow under green glass. The faintly orange tinge was undoubtedly imparted by strontium. Calcium would show finch green under green glass."

His eyes were bright with the wonder of discovery. "I used spectroscopic tests to make sure," he said. "The characteristic lines of calcium, orange and green and faint indigo, were wholly absent. Mona, something dissolved all the calcium in Wilkus' body."

MONA'S EYES were shining as brightly as those of her companion. They were a strange pair, inhuman, detached, emotion-seared only by the science flame within them.

"But could a man live if——"

"A little while, apparently," said Crayley, anticipating her thought. "I would have said no, but we can't dispute this evidence. The withdrawal of calcium from all the cells of his body constituted a kind of melting out, release or flowing away of tissues and plasma. His body shriveled and melted like tallow in hot sunlight. But apparently the neural patterns were not destroyed completely. Motor and sensory nerves functioned, though the brain relapsed into idiocy."

"But what caused it?" asked Mona.

"Only one thing could have caused it," replied Crayley. "Radiation. Invisible, spectrum-ray radiation, more intense than anything we have ever known on Earth, a terrific bombardment by ultra-

violet. Not just waves filtering through, but some inconceivably powerful concentration of ultra-violet such as must exist within a few million miles of the Sun. So-called black-sheep rays perhaps, which would be deadly to all life on Earth.

His lips tightened. "Why, even the comparatively harmless members of the ultra-violet family will drain the calcium from protoplasm. Single cells, amoebae, slipper animalcules exposed to ultra-violet and whirled in a centrifuge will become viscous blebs in a few seconds—viscous blebs with a hardened core.

"The radiation drains the calcium from the outer surface of the cell and deposits it about the nucleus. Such radiation as I have suggested would do that to all the cells of the human body, would drain off the external lime and——"

Crayley shivered a little for the first time. "It is pretty horrible, Mona. But there's a great wonder here, too. Outside in the cold and darkness, there are intelligent beings, Mona. Mercury is not uncontaminated by the disease of life."

Mona stared, wide-eyed. "But ultra-violet doesn't penetrate metal. How did the rays sear Wilkus through his space suite?"

"You are forgetting the properties of diffractochrome," said Crayley. "Like the new space-suit and space-ship metals it is a silvern alloy. Ultra-violet will penetrate silver—if the radiation is intense, and the sheet or screen is not too thick."

"What kind of life, do you think, Gibbs?" said Mona, in a grim tone.

"I do not know. Something invisible or nearly so, that walks or crawls or glides in darkness. I saw a flash of purple light. We both saw the sands move. Something was resting on the sand and arose as we approached."

"But do you think the form was composed of invisible light itself?"

Crayley shook his head. "Perhaps, but I hardly think so. I think it used the rays as a kind of weapon. Something tangible moved out there."

He gripped the edge of the rubber sheet and drew it completely over Wilkus' body. Then he slipped off his gloves, and straightened out the objects on the table. His fingers were shaking a little.

Mona said, "Are you going out again, Gibbs?"

Gibbs Crayley nodded slowly. "I shall take the infra-red stroboscopic camera," he said.

Mona's brow crinkled. "Why not just one of the ordinary infra-red cameras?" she inquired. "If you just want to penetrate darkness, you won't need a stroboscopic lens."

"Not merely darkness," said Crayley. "I may need something beside a plate sensitive to infra-red heat."

"But why?"

"Suppose the shape were moving incredibly fast. We use infra-red plates because the molecules of our retinas are insensitive to waves that are in the nature of heat rather than visible light. But the molecules of our retinas don't register swift motion either. We see objects moving at terrific speeds merely as blurs."

"And no plate can correct that limitation," said Mona, nodding.

"That is true. But the stroboscopic lens can. It simply arrests the motion at one point, takes a dozen swift images at intervals of one ten-millionth of a second and telescopes them into a single image. The infra-red plates will take care of the darkness, but I shall need a stroboscopic lens to register movements too swift to effect chemical changes in the human eye."

"But what makes you think the objects are moving incredibly fast?" asked Mona.

"They are invisible, or nearly so.



That can mean one of three things. Either they are composed of some alien form of energy which emits light waves too long or short for visual perception, or they are moving so rapidly as to be perceptible merely as faint blurs, or they——"

He scowled. "They are composed of

radiant particles above or below invisible light itself in wave length. In that case, no instrument of science could detect them. But I think we can rule that possibility out, for waves below light would be odorless and hueless. Theoretically they could exist, but that they could move anything tangible, or pro-



*It was the last thought that ever stalked the corridors of his brains. A bright light flashed in the darkness—
moved nearer—*

duce subsidiary radiation as substantial as ultra-violet is unthinkable.

"We are then left with two possibilities: the forms are composed not of stable matter, but of invisible energy producing ultra-violet as a by-product; or, they are moving so rapidly that our eyes would perceive them in bright light as mere blurs, and in darkness not at all."

"It will be a terrible risk," said Mona, quietly.

"Perhaps," said Crayley.

IV.

THE NEXT two and a half hours were to confirm Mora's intuitions more grimly than Mona had anticipated, but a perverse fate denied Crayley the privilege of sharing the risk in person. On the way up to the main observation chamber at the rear of the vessel, the leader of the Mercury exploratory expedition wrenched the tendon of his right ankle atrociously on a ladder rung.

Parkerson and the two young men

stood white-faced and listened to him curse and rave. For the first time, he surrendered to expansive emotions with a volatile vehemence that did not even respect the presence of Mona Massin. The ankle wrench had thwarted him at a vital point.

Mona thought: "He's a tremendous human being with warts in any life-size portrait." But Mona wasn't shocked. She wasn't even embarrassed. The provocation, she felt, was enormous, and she sympathized with him and wanted to harangue fate, too, in words as vigorous and as salty.

Seaton and Wilson immediately volunteered to serve as proxies. They looked at Mona all the time they were getting into their space suits, kept staring at her through goggle eyes of quartz when their helmets transformed them into shapes of nightmare.

Mona experienced a momentary twinge. They were so very young, so eager, so pathetically confident—so very much in love with her, too. She hoped that they would be careful.

The stroboscopic camera was a compact and impressive device. A small metallic cone, about the size of an oxygen tank, surmounted a spectroscopic focusing panel and a curved, flexible carrier. In obedience to Crayley's instructions Parkerson had removed it from a storage container in one corner of the chamber, loaded it with a dozen plates and handed it to young Seaton.

White-faced with pain, Crayley stood up and watched the two clumsily clothed and efficiently equipped youths climb awkwardly up a ladder to the corridor above. Grimly he watched them disappear through a circular door and heard the air-suction pump wheeze, and saw the cold lights flicker as the portal clamped shut on their receding boots.

Parkerson was staring steadily at Mona, in a kind of trance. But Mona had eyes only for Crayley. As a spasm of pain convulsed his features her own

face twitched a little. She seized his sleeve and tried to draw him to one of the benches which lined the wall. But he refused to be guided.

With a muffled grunt he jerked his arm free, limped painfully across the chamber, and seated himself in a metallic swivel chair before a network of interlocking mechanisms and a switchboard that glittered in the cold, light lamps.

For a moment, he swayed in the chair, moodily staring at the heavy partition of cobalt glass, with compressed lips. Then he clutched a double throw switch and manipulated it with vigor. A faint whirring sound arose and a tiny opening appeared in the center of the wall above the massed mechanisms and a circular metal switchboard. Swiftly, the hole widened as the cobalt glass withdrew in overlapping crescents from an observation window of miraculously transparent glass.

THROUGH the exposed window, Crayley stared grimly out into the black Mercurian night. At first he saw merely moving flashes of light on the faintly luminous metallic plain far below. Then one torch flare cut across the other, and the clumsily clad little figure of Allen Wilson stood out in sudden, blinding relief. He was moving forward very slowly and cautiously, with testing staff extended and electric torch focused on the soil before him.

Suddenly, Crayley saw something which froze his heart. An orb of purple light shone clear and bright, for an instant, above the plodding, tiny figure. Then it vanished, and as it did so the figure before the semicircle of torchlight crumpled. Crayley's face went gray.

The torch flare of the other explorer continued to cut a bright swath across the alien terrain without for a full five seconds after Wilson's torch and staff went clattering. Then it was lifted up. The light itself was lifted high into the

air and its beams danced fantastically on objects far away.

Crayley could not see Seaton's form, but he could follow the youth's movements by the shifting of the torch. The engineer had been picked up by something, and was moving about high in the air.

Crayley leaned tensely forward, and manipulated a rheostatic, control mechanism near the center of the panel. Instantly, the plain below was flooded with pale-yellow light. From an immense arc lamp in the stern of the *California*, light streamed out in wavering crescents on the dark soil. Crayley started violently, sat rigid, and his eyes opened to their widest expanse.

High above the rust-red plain, the grotesque figure of Seaton was dancing and bobbing about. His difrolchrome-incased limbs were stretched wide. He seemed spread-eagled against a field of star-flecked blackness, crucified upon empty air.

Crayley had the feeling that the jerking figure was already dead. He turned, with sweat on his brow, and shook his head grimly. Mona and Parkerson were standing beside him, staring. All the blood had ebbed from Mona's cheeks. Below the suspended man a vague, grayish blur seemed to intercept the light and dim the plain beyond.

Suddenly, as they watched, the suspended figure fell to the ground. It appeared to strike the soil forcibly, turning over and over, and went careening along the plain until it collided with the limp form of Allen Wilson.

Both forms were horribly limp. The space suits had acquired a ghastly inertness. They lay spread out like empty sacks on the red Mercurian soil. Crayley could see the camera clearly. The little apparatus was standing on its circular base a few feet from the limp bodies. Crayley swung about in his chair and manipulated another rheostat.

The camera disappeared as the

vacuum suction tubes at the base of the *California* roared into activity. Crayley swung about, shut off the beam control rheostat and said in a perfectly calm tone: "Get the camera, Parkerson."

Parkerson nodded, crossed the chamber to the vacuum tube receiver which stood in the center of a tangled skein of cold heat tubes, refrigerating wires, and complex oscillators. He clicked open the wafer-thin steel cover and thrust his hand deep into the tube. The cold of space seemed to gnaw at his fingers as he grasped the little camera and drew it forth.

The camera had simply been exposed to a temperature of fifty degrees below zero and smoke poured from it as Parkerson carried it across the chamber. Crayley seized it with shaking fingers and broke it open. From its interior a thin sheaf of plates fell out into his hand. Crayley laid the camera down quickly and handed the plates to Mona, whose fingers were still warm.

MONA held the plates firmly, and stared at them for an instant in fear and trembling. She did not think that the plates contained a single image. But she knew that if there were images visible on even one of the plates they might prove blasting and awful to her conventional, human self, and, to the scientist in her, more wonderful than all the stars of heaven. Fearfully she lifted the topmost plate and turned it slowly about. Covered with emulsion, sensitive to infra-red radiation, it had been automatically developed within the camera, and was very dry and brittle.

The plate contained a clear image. Crayley sucked in his breath sharply as he stared at it. Mona simply stood quietly, hardly understanding, looking at the queer, cone-shaped object with contracted brows. Then a weird sensation of alienage rushed through her being.

Crayley said: "I should say that it was a sentient form—perhaps not in-

telligent, but certainly sentient. It's utterly unlike anything we've imagined, though."

It was impossible to judge the object's size exactly, for the smooth plain on which it stood contained no other large object to serve as a gauge. But, by comparing it with the scattered metallic pebbles which were of nearly uniform size, Crayley concluded that it was very large, about four times as tall as a man, and proportionately huge in its other dimensions.

It was cone-shaped, but there was something vaguely and disturbingly lifelike about it. From the base of its tapering body a single long rod descended, and there were four rods projecting sidewise from its narrow summit. Where the base of the rod rested on the soil there were curious little flares, as though the shape were standing on a surface which gave off light in coruscating flashes.

It was really simply a pivoting or standing cone, with one leg and four arms, but something about its geometry was vaguely disquieting—more than that—frightening. Mona shivered when Crayley said suddenly: "Look at the second plate, Mona."

Mona obeyed, gasped. "There are three of them here," she said.

Crayley seized the plate and scrutinized it hastily. "By heavens, yes—three—and grouped strangely."

"Five on this," said Mona, extending the third plate.

Crayley spent more time over the eleventh and twelfth plates than over the others. When, at last, he raised his eyes his lips were set in tight lines.

"I'm afraid we're in imminent danger," he said.

Parkerson started. "What do you mean, Gibbs?"

"Simply this. I believe that these cones are sentient and intelligent entities which are moving so rapidly that we perceive them as faint blurs. I think they're

actually shapes of energy, moving fields of force, endowed with intelligence and conscious purpose—with a central core of unstripped electrons; perhaps.

"I'm sure they're not protoplasmic, and I don't believe they're gaseous or mineral. It's guess work, of course, but I think they're connected in some way with the electromagnetic field, with the shock patches. We haven't begun to fathom the mysteries of the electromagnetic field and energy transformation and I don't believe we ever shall. But we do know that magnetism has a most powerful effect on light.

"If we put a sodium flame before the slit of a spectroscope we get a bright double line. If we put the flame between the poles of an electromagnet the line broadens. Here the experiment might be even more impressive.

"Mercury's crust is apparently an electromagnetic field of undreamed of potency. I believe that these cones are generators of ultra-violet radiation, and that they draw a kind of electromagnetic nourishment from the shock plates. They are energy shapes formed and replenished by the electromagnetic field. Don't you see?

"All Earth life is in reality shaped by energy, too. Protoplasm itself is an electrical phenomena, shaped by energy and radiation. The mild conductor and transformer which we know as protoplasm is the product of an environment not heavily charged with solar and crustal energies.

"The earth is comparatively far from the solar disk, that great furnace of all radiant power. The deadly ultra-violets are slaughtered in our upper atmosphere, other rays reach us in feeble dilutions. What do we know of the cosmic radiations at white heat, at full blast?"

He shivered suddenly. Mona turned pale, because he was not the shivering kind.

"I think they're planning to attack the

ship," he said, quietly enough. "They seem to be forming into a kind of attacking unit. Just look at this picture. They're all grouped about in a wedge-shaped formation, at least fifteen cones, with the tapering ends pointed at the ship."

He handed the last plate to Mona and swirled about in his chair until he was gazing downward at the nearly lightless plain far below. Beyond the observation window only the star-blanketed sky was clearly visible. Below was blackness, save for the faintest glimmerings of light here and there where the tenuous starlight and the Venus rays glittered on the points of tiny pebbles.

But Crayley knew that across that metallic stretch of soil, invisible shapes of power were hideously moving. He also knew that the cones were assembling on the immense shock patch which mushroomed out into the darkness several hundred feet from the stern of the *California*.

CRAYLEY gripped the arms of his metal chair and started to rise. As he did so, a violent tremor went through the great ship. There was a roar that drowned out all sound, even Parkerson's choking gasp, and Mona's scream. There was a slow detonation, that shook every object in the chamber. Crayley felt the swivel chair spin; he felt his heart leap within him. The floor seemed to rise up, suddenly and horribly.

All about three terrified people the familiar silences were obliterated in a blast of sound that split the eardrums of Henry Parkerson. There ensued an instant of comparative silence, while the plates of the *California* emitted eerie cracklings.

Then, into that swaying, blast-rocked chamber there stumbled another man. His face was a distorted mask of hate and fury; his gray lips writhed as he staggered across the floor. In his hand

he held a blunt-nosed, blue-barreled flame pistol.

Girolamo Lorenzo, the Latin biochemist had brooded on Mona's unearthly beauty too long and too intensely for his own peace of spirit. The flame gun in his hands spat its lethal charge before he reached the center of the chamber. Parkerson was swaying directly in the line of fire. As he jumped frantically aside, a long tongue of cold, green flame spurted toward him, and wrapped him completely about.

Crayley leaped from his chair with an alarmed cry. In a fraction of time his brain had grasped the significance of the explosion and its sequel. Somehow, the poor, crippled maniac, aflame with jealous rage, had descended into the propulsion chamber and exploded a rocket charge. The *California* was now clear of Mercury's crust and plunging skyward at a steadily accelerating speed.

Crayley shouted. "Get down, Mona. Throw yourself down."

He hardly expected that Mona would obey. She was swaying rigidly against the control panel, too stunned and utterly bewildered to duck or cry out. But he shouted in hopeless desperation, to draw the maniac's fire.

Girolamo Lorenzo ceased to advance. He turned slowly about, and leveled the snub-nosed, still-smoking pistol at Crayley's head.

"No one of you shall live," he said.

Crayley's features were perfectly composed. It was the end, of course. But he had read nature's book fearlessly, walked with rare spirits, and dared the gulfs between the planets. He had no fear of death.

"You poor devil," he said. "Don't you realize what my death will mean? You can't pilot the *California* without the knowledge inside my skull. If you burn my brain you'll be lost in space. Mona will die, too. If you want to kill——"

Crayley went suddenly white. His

speech congealed. Before him the pale, tortured face of the biochemist was changing color. His skin had become a coppery red in the steady radiance of the cold, light lamps. For an instant, this coppery hue persisted. Then it deepened to a glossy black. Though his rage-convulsed lips still continued to writhe back from teeth the color of blood his eyes seemed to see nothing.

The pupils were faded, and stared from an atrophied expanse of black and shriveled skin. Suddenly, as Crayley gazed horror-struck, the Latin's squat frame went taut from crown to toe. The torso stiffened and the arms went up and out. The legs jerked upward as though a puppet master had manipulated them from above.

The body rose up from the floor, and hovered, for an instant, with spasmodically jerking limbs, in the center of the chamber. Then blinding light flashed all about it.

Crayley threw his arm before his face and staggered backward as an unimaginably destructive blast of deadly ultra-violet tore through the cobalt glass walls of the vessel, and cut a deep swath of radiant energy through the cold light glow. The blinding flame that wrapped Lorenzo was from his own burning body. Ten seconds after he had arisen he descended again. But nothing settled on the floor but a thin sprinkling of inert gray ash.

MONA had fallen to the floor in a dead faint. She lay at the base of the control board and Crayley had to crawl toward her on his hands and knees. Stabbing pains were racking his right leg and thigh. When he tried to rise to his feet the pain increased. He dragged himself along the floor, across Parkerson's limp form, and over ten feet of vibrating metal.

The great ship was now roaring evenly through the black ether gulfs

toward Venus' orbit. Another rocket charge had exploded in the basal compartments and the magnetic stabilizers had begun to function.

For one terrible moment, Crayley feared that Mona was dead. Blood pounded in his temples as he dragged himself to her side and slipped his arm beneath her shoulder. He lifted her slightly, staring with frightened eyes at her pale, unmoving countenance.

Instantly, her eyelids flickered open. At first everything in the swaying square of her vision danced and wavered fantastically. She saw a white blur that slowly became a face. It was a familiar face, but it wore an unfamiliar expression. Crayley's rough-hewn, impersonal features were suffused with tenderness and relief.

"What happened?" she asked. "Something lifted Lorenzo up. I saw a blaze of light. Is he——"

Crayley's arms tightened about her. He nodded grimly. "Lorenzo is gone," he said. "The massed cones on little Mercury took a parting shot at us—blasted us with ultra-violet radiation when we were miles from the crust. Luckily it wasn't a flooding radiation but a single narrow shaft, apparently, which bored through the walls of the vessel and killed Lorenzo instantly."

Mona's eyes filmed a little. "Poor lad," she murmured. "He——"

"I know," said Crayley. "He loved you—so did Wilkus, Seaton, Wilson and Parkerson—in their fashion. But, Mona, you will never know how deeply I——"

There was a momentary pause when it seemed to Mona that he was going to say it rather awkwardly. So, to spare him embarrassment, she put her arms about his neck and drew his head firmly downward.

—"love you, Mona," he concluded, quite simply, at last, and there was only a faint, insistent droning in the observation chamber when their lips met.

TRIMMED EDGES

Well, here it is. Another step ahead. The pages are certainly easier to handle, aren't they? And it is better for filing. I believe, too, that the covers will hold better.

*It costs more money to put the magazine out this way—but if you play the game, I'll play it with you. Have you introduced **ASTOUNDING** to any new readers lately? We need your loyal coöperation during 1936 if we are to keep our course progressively upward.*

*I think you'll enjoy this issue. Lovecraft comes back to science-fiction! Three novelettes! Ten stories altogether—eight of them complete! You know sometimes letters to **Brass Tacks** undertake to compare other magazines in the field with ours—but they invariably overlook story-for-story and page-by-page value in such comparisons.*

*I have struggled conscientiously for two and a half years to give you the biggest value in the field. One after another I have sought and brought back into the fold writers who had drifted away. It is easy to forget perhaps, but we need to remember how **ASTOUNDING** has brought the field back to life.*

*And our program holds so much yet to be accomplished. There are some **GREAT** stories, by great writers, now in preparation. I am planning months ahead—because I have faith to believe **YOU**, every one of you, will pass the word along as to our consistent progress.*

*Believe me, I need a **GROWING** reader audience to support what I have in mind. This month's surprise with the smooth edges is proof of my good faith. May I have proof of your support?*

*When I know endless thousands of readers are reaching out to enlarge our reading circle, I can move confidently toward our ultimate goal—a science-fiction magazine that not only has no equal; but one which **CAN'T** be equaled!—The Editor.*

The Psycho Power Conquest

by R. R. Winterbotham

STEVEN WALLECK'S voice carried a deep, somber note. Had it not been for his clipped enunciation the tone might have been described as mysterious. But he had a businesslike manner about him. He turned to solving mysteries of the universe rather than to creating new ones.

"In many ways hypnotism is a condition closely related to normal sleep," Professor Walleck told his assistant, young Vance Gibbons. "On the other hand, there are certain characteristics which make hypnotism different from ordinary sleep. It lies on the fringe between science and hokus-pokus and for that reason it has become one of the sacred cows of science, neither to be overly exploited nor explored.

"There are a number of things science would like to know about hypnosis, but the subject is approached carefully, lest scientific reputations be jeopardized."

"And telepathy, I suppose, is one of these things?" Vance put in, with one of his serious smiles.

"Yes, if there is such a thing as telepathy it must be related in some way to suggestion, or hypnotism. Scientists have run across several things that have startled them—coincidences, perhaps, yet so strangely recurrent that the word coincidence does not wholly explain.

"I have in mind an experiment completed a year ago in an Eastern university. Unhappily, I made no note of

it at the time and I have since lost the clipping. It was conducted under scientific laboratory conditions, yet it disclosed that in a group of subjects if half of them knew certain facts the remaining half could learn the truth in a proportion higher than could be accounted for by mere guesswork."

"But such a proportion would not be beyond mathematical possibility, in one isolated experiment." Vance looked well pleased with himself for this observation.

"No, not in one experiment," asserted the professor, "but my own trifling observations corroborate these results. If there is no telepathy there is, at least, contagion of thought.

"Just what is thought? An electrical impulse? If so, it should obey laws governing electricity. One nervous system, delicately attuned to another—I think *en rapport* is the term used—should be able to receive impulses just as easily as a radio receiver picks up radio signals. Psychology is a new science. As great discoveries lie ahead in that field as those in the field of astronomy at the time of Galileo.

"For instance, how many times have you and I felt a weird realization as we did something or said something: 'I have done, or said this before.' Science calls it an illusion of memory and in extreme cases it is said to amount to a type of insanity called paramnesia. Yet it occurs in sane minds. Still, call-



*"The meteor settles slowly. There are men inside—
no, not men, but—"*

ing a thing an illusion does not make it one. Science demands proof.

"How many times have two, three or even four individuals in widely separated parts of the world worked out the same discoveries? I recall, scarcely six weeks ago, how I mailed a scientific paper to a periodical. A few days later I received a copy of the magazine carrying a paper by another scientist bearing the same title as the one I had written.

"The article was by a man I knew only by reputation. His treatise must have been on the presses while mine was in the mail. Such examples are abundant. They indicate that subconscious minds constantly are inducting telepathic messages; but only a small part of these seep through to our consciousness in recognizable form."

"How do you propose to prove your theory?" inquired Vance.

The professor pointed to a small

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cabinet in one corner of the room. It looked like a small model radio. Inside the cabinet, Professor Walleck disclosed rows of vacuum tubes in an ultrashort wave hook-up. One of the conspicuous features of the apparatus was the presence of a crystal, used on early radio sets, but long since abandoned in favor of the vacuum tube.

"This," declared Professor Walleck, proudly, "is my thought interceptor."

IN A FARAWAY WORLD Brulf entered the dank passage leading from the bleak surface of his planet. A moving conveyor swept him swiftly through smelly corridors, lighted with a soft phosphorescent glow. Twice the creature changed from one belted conveyor to another.

Brulf had been away fifteen years in Earth time, yet not a thing he saw had been changed. Nor had Brulf expected a change. The inhabitants of his planet, Pluto, huddled as they were in the core of their world, had nothing further to look forward to in developing their present home.

Stepping from the last conveyor, Brulf moved in a circular, rolling gait on his three tripodlike legs as he walked toward the fanlike door of the palace of the *victyl*, Sigov, the dictator of the remnants of the dying planet.

Brulf had a slender, cylindrical torso, rigid as a pillar of stone, connected with a globular head, which was covered, not with hair, but with a spongy, external brain, where the head joined the torso grew a dozen tentacles, specialized for sight, sound, speech, smell, touch, fighting and telepathy.

Touching a button with one of the tentacles, Brulf watched the door fold aside. He rolled into a musty cavern. Overhead the walls shot upward toward a huge dome, covered with phosphorescent material which cast an eerie glow over the chamber.

Along the sides of the room stood

rows of creatures like Brulf. They stood motionless as the rocks around them, save for their tentacles, which swayed nervously. The whistle of their voices quieted at Brulf's entrance.

Sigov, a majestic creature on a high dias in the center of the chamber, was not different from the others, save that his head was larger.

"I have returned, beloved *victyl*!" Brulf intoned in his whistling buzz. He raised his tentacles and spread them in salute.

The nervous swaying of tentacles in the cavern stopped. The auditory tentacles were held forward and the telepathic ones looped about the brain-covered heads. Brulf felt a flood of telepathic questions: "Is it hope—or doom?"

"For many *semesti* I have wandered through space in the cruiser," Brulf began. "I followed your orders, sire, visiting each planet nearer the Sun than ours. I visited even some of the larger satellites."

"Did you find life?" asked *Victyl* Sigov.

"In a sense, I found life on nearly all, but resembling our own intelligent forms I found only two parallels. On five of the eight planets and on all of the satellites, conditions were such that our race could not hope to survive.

"Neptune and Uranus were too bleak; Saturn, too gaseous; Jupiter, too large; Mercury, too hot. Mars is habitable, but it lacks water, necessitating a change in our mode of life. Venus and the Earth alone are suitable for our race."

"What of Venus?" inquired Sigov, anxiously.

"It is the least preferable of the two remaining planets. It does not turn on its axis. It is uncomfortably warm and its humidity is high. Nevertheless it has conditions suitable for our race."

"And the Earth?"

"It is ideal. Its climate is uneven due to a tipping of its axis, but it has

pleasant conditions in most parts of its land surface that are even more suited to ourselves than Pluto was billions of *quasisemesti* ago. There are plentiful water and luxurious vegetation on its surface."

"The life there, what is it like?"

"It has a highly intelligent form of life, chief! Its creatures, called men, are different from ourselves, but they follow our own principle of subsistence. The creatures are slightly less civilized, due to later development, but they have created vast works."

Among the Earth men are ingenious engineers and scientists. The Earth men have developed powerful engines of destruction, far surpassing our own, although lacking in subtlety. We can easily overcome them with strategy, but he cannot expect to win by force alone."

Victyl Sigov raised his tentacles to his brain surface. Brulf and his fellow creatures understood that the ruler was thinking. As one, they raised their swaying ligaments in unison to aid. They sent thought currents pounding on the brain of the *victyl* to help in solving the problem.

It had been this mass brainwork of the mightiest thinkers of Pluto that had struggled with and solved the problem of meeting the dying years of the planet.

"As the last embers of Pluto's inner heat burned low, they worked out a vast underground living program. Now, even that method of living was insufficient to keep alive the inhabitants. The artificial heat of the inner city was dying. In a few more *quasisemesti*, each one representing more than three hundred Earth years, the planet would be cold, dead and lifeless."

During the last *quasisemesti*, huge transports had been built to traverse space. The population was scientifically reduced to a mere ten thousand who were to carry the seed of Pluto's life to a new world.

Brulf was chosen for the scouting trip. He had acute perceptive powers, ingenuity and a vast knowledge. His return marked the final step in the preparations to leave the planet.

Sigov had finished his meditation.

"What are the failings of this race of Earth men, Brulf," he asked.

"They have many failings, supreme *victyl*. They are easy to fool; they are selfish and savage; they have all of the shortcomings of an immature race."

"Are they susceptible to hypnotism and suggestion?"

"Aye! They are most easily influenced, although they have not yet solved the secret of telepathy. In fact, it was through unguarded telepathy that I was able to learn their language, their habits, their innermost thoughts, while my transport rested on the huge glacier of the southern ice cap. It was unfortunate that I landed there, for no men live in that region. Had I stopped in another part of the world I might have captured some of these creatures and brought them back."

Sigov lifted his tentacles once more. This time it was not to think, but to broadcast an order.

"Our weapon shall be hypnotism," the *victyl* decided.

FOR WEEKS and months Professor Walleck and his assistant had worked upon their experiments with the small thought interceptor.

"We have learned that the small amount of electrical energy produced in thought may be carried to another brain by induction," the professor said at length. "We can detect this with the interceptor. But attempts to rebroadcast this energy on a magnified scale are shameful failures. Something is lacking, either in the machine or our mental make-up."

"Are you positive you need the crystal in your set?" Vance asked. That shining piece of mineral bothered him.

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It represented the archaic in modern surroundings.

"Yes," nodded the scientist. "This special piece of mineral, which I have dubbed *hyperæstone*, has a certain hypnotic effect. It brings the mind in tune with the machine. Let us try once more."

The professor stood in front of Vance, seated on a chair in front of the machine. Professor Walleck stroked his assistant's forehead. Through training, Vance found it easy to succumb to hypnotism. His eyelids fluttered, then closed in sleep. The scientist turned on the machine.

"You will place your mind *en rapport* with the machine," whispered the professor, "and tell what you feel and see."

For a moment Vance was silent. Then he spoke.

"I see huge glaciers, high mountains. I feel intense cold. Three men are beside me—one of them is Commander Eagleston, in charge of the American antarctic expedition. Now I feel a contagion of fear. Something is flying overhead. It is a huge disk-shaped object, spewing fire like a meteor. My companions clutch their alpine sticks, for we have no weapons. The meteor is settling slowly, too slowly on the ice. I feel a desire to run and a curiosity to stay. I am standing still with Commander Eagleston.

"Now a section of the disk is folding back. There are men inside—no they are not men, but creatures from another world. Something as large as a bushel basket, covered with spongy gray matter is protruding."

"What is it?" whispered Professor Walleck excitedly. His machine was working for the first time, but was it a dream or fact?

"I feel a surge of thoughts—thoughts that are strange and baffling; thoughts that give me complete understanding of things I have never known. They come from that spongy thing in the door—

that thing, my Lord, it's a creature's head!"

Vance's voice was drawn into a terrified whisper. His face, even in hypnotism, was contorted with fear.

"I feel drawn toward the object!" Vance rose from his chair. His fingers relaxed as they dropped the imaginary alpine stick.

"What is happening now?" begged Professor Walleck.

Vance suddenly toppled forward into the scientist's arms.

"Come out of it!" ordered the professor. "But remember what you saw."

Vance slowly opened his eyes. "I had a strange dream," said the assistant.

"There was something very genuine about it," the professor shook his head. "I could almost feel it, too. What happened, that caused you to swoon?"

"Everything grew blank. It was as if I had been hypnotized while hypnotized."

The following morning the newspapers of the land carried the story that Commander Eagleston of the antarctic expedition and three companions had disappeared while on a short exploring trip near Queen Maude's range. The party had not reported by radio for more than twelve hours.

BRULF and his dozen companions scrutinized the captives closely. He noted the dissimilarities between the Earth men and himself.

Commander Eagleston and his three companions had not been conscious since they had been placed in the hypnotic stupor at the time of their capture.

"What do you make of them, Brulf?" asked Philig, second in command of the scouting ship.

Brulf jerked his auditory tentacle, a sign of negation. "One of them," he began pointing to Jimpson, a geologist,

"recently has been in telepathic communication with some one. The others do not even suspect such a thing as telepathy exists. I'm not sure that this one does, but he has been communicating. I'm sure of that. Strange, I did not know the Earth men were aware of telepathy. We must control our thought messages hereafter."

"Can we use the men we have?" asked Sigov.

"All are persons of importance, apparently. That is good. Our early operations depend on the use of leaders, hypnotized of course."

"Let us try the wiges," suggested Philig.

"Try them," Brulf ordered.

From the cargo storerooms, Philig brought four bright and shiny gems and placed one in the hand of each of the captives. Brulf whistled loudly to arouse the four hypnotized men through their senses of hearing.

Without uttering a sound, Brulf mentally directed the four men to jump, walk, talk and do other simple tasks. The wiges, crystals made from a mineral abundant on the inner core of the planet Plute, amplified the telepathic impulses without additional machinery.

"The wiges work perfectly. This man Jimpson responds better than any of the others. We will use him as a key man in our plan."

"Good!" wheezed Philig with satisfaction. "While you set up headquarters here, I will return with the cruiser to Pluto to get the expedition underway. Do you have sufficient wiges?"

"There are one million in the hold," replied Brulf. "In a world possessing communication facilities such as this that will be sufficient. I think, however, it might be a good plan to overcome the colony on this ice cap. There are fewer than one hundred, according to the information we get from these. If we catch them sleeping we can take them without use of the wiges."

AST-10

"One thing bothers me," mused Philig. "Why was Jimpson sending out telepathic signals? They were not clear and somewhat dissociated, but they were signals. Somewhere, I believe, is an Earth man who is fumbling with the secrets of telepathy."

"We must work swiftly," observed Brulf.

That night eighty-seven men of the antarctic expedition were lulled into a hypnotic sleep and a dozen strange monsters took over control of their colony.

PROFESSOR WALLECK picked up the morning paper.

"There is a great deal of space devoted to the antarctic expedition today," he said to his assistant.

"That has been true since the false alarm over Eagleston's disappearance a few days ago," replied Vance. "Strange how a small breakdown in the radio could have made the whole world fear for his safety."

"Humph!" grunted the scientist. "Do you realize that no one heard a word from Antarctica for a full twenty-four hours?"

"Radio trouble," insisted Vance.

"What about your bad dream during our telepathy experiment?"

"Too much mince pie," suggested the assistant.

"Our thought interceptor hasn't worked since."

"What I saw in the vision was too unreal to be true. Why, one would suspect the Earth was being invaded by a race from another world, if my dream was taken seriously."

Professor Walleck paced the floor, then returned to his chair. "How do you account for the fact that four men disappeared, including Commander Eagleston, and in your dream there were the same number in the party, including yourself?"

"Coincidence!"

"Things like that are happening daily and we try to explain them with a word," sniffed Professor Walleck. "But let it be for a while. Did you read this paper?"

"No," replied Vance, taking the sheet offered by the scientist.

"It says that during the exploring trip, just before the radio went bad, Dr. Jimpson, the noted geologist, discovered a new type of precious stone. He calls it a wige. Hum! Strange name."

"He describes it as being a hydro-carbon with the carbon atom in a different position from that of any other molecular substance known on Earth," the scientist went on. "He says the chemical formula for wiges is H_2C . Does that mean anything to you?"

"The cold is affecting Dr. Jimpson's mind. It is a nearly impossible combination. If oxygen were substituted for carbon, I'd say he had found a crystal of ice."

"Dr. Jimpson is a reputable scientist. He doesn't make rash statements to get his name in the Sunday sections. I would like to obtain one of the wiges." Professor Walleck glanced toward the laboratory wherein stood his thought interceptor. "It might work there."

Vance read through the article. "It says Dr. Jimpson and several companions are returning home a few months ahead of the others with a cargo of wiges. Perhaps you can have him in for a few glasses of ale on condition he brings along some of his precious crystals."

PHILIG entered the *victyl's* cavern and saluted his chief.

"Everything is ready on Earth," he reported. "By the time we arrive the wiges will be distributed."

"You have established headquarters on Earth?"

"We have, and outside of ninety-one captive humans no one on the planet

suspects our presence," Philig announced proudly. "Our headquarters are on an uninhabited continent at the South Pole. While the weather there is mild, compared to that of our own world, it is too cold for the Earth men and we are safe from discovery."

"Our captives are kept in a constant state of hypnotism and at our orders they keep in touch with other parts of the Earth so that no one will suspect what is going on. We have even started preliminary propaganda, to speed the distribution of wiges, by means of radio communication."

"What is Brulf's plan?" asked the *victyl*.

"The wiges act to hypnotic waves in a manner similar to that of some minerals to radio waves. When sufficient wiges are distributed throughout the Earth we will accomplish mass hypnotism to bring about a hysteria of slumber. We will then take over key points on Earth and methodically subjugate the inhabitants. We can keep slaves for our needs and slay the remainder."

"Will the Earth men keep the wiges after they are distributed?" asked the *victyl*.

"Brulf has reported to you that Earth men are selfish. As the wiges are distributed a hypnotic suggestion will be made that the crystals are valuable keepsakes. The wiges will never be discarded."

Sigov nodded in admiration of the plan evolved by Brulf and Philig.

"We shall leave at once for the Earth," announced Sigov. "Get ready!"

PROFESSOR WALLECK'S spaghetti dinners were famous and Dr. Jimpson, fresh from the hardships of an antarctic expedition had enjoyed himself immensely. Now, as Dr. Jimpson, Vance and the host sat about the laboratory alternately puffing and chewing cigars, the conversation drifted aimlessly from one topic to another.

Professor Walleck observed that it was not the same old Jimpson. The geologist seemed preoccupied. His thoughts were disconnected.

"What are these wiges?" asked the host of Dr. Jimpson. "Tell me about them."

Jimpson dropped his preoccupied manner like a cloak. He leaned forward eagerly.

"They are more precious than diamonds," he whispered. "I have one for you and one for Vance as a token of our friendship. There was only one small pocket in the territory we explored and we brought back all we could find."

Jimpson held out a crystal the size of a pea. Professor Walleck took it. Another was handed to Vance. At its touch, Vance felt a queer lulling sensation. His nerves were soothed by its touch.

Professor Walleck carried his crystal to the thought interceptor.

"I should like to try an experiment, if you don't mind," he explained, replacing the crystal in the machine with the wige. Jimpson did not seem to hear, he was talking eagerly about wiges to Vance.

Professor Walleck switched on the thought interceptor. He stroked Vance's forehead. The young man promptly went to sleep.

"Tell me," ordered the scientist, "what Dr. Jimpson is thinking."

Vance was silent for a moment. Then he spoke softly. "Our minds are not *en rapport*," he said.

"What am I thinking?" asked Professor Walleck.

"You are wondering if Dr. Jimpson has been hypnotized. You fear that he and other members of the antarctic expedition have fallen into the power of creatures from another world. You believe that is why I cannot read his telepathic thoughts."

Professor Walleck looked startled.

"Vance," he cried, "wake up. We have it perfectly!"

Vance opened his eyes. He saw Professor Walleck's flushed face. He saw Dr. Jimpson in front of him, still fanatically discussing wiges.

"Don't you see, Vance? Your bad dream was true. Dr. Jimpson has been hypnotized."

Jimpson turned to Professor Walleck. "What were you saying?" he asked.

Professor Walleck's voice lowered itself to a bare whisper. "I am the creature who hypnotized you, Jimpson. You now are under my power."

Jimpson's eyes closed.

"You are not in this room. You are with Commander Eagleston exploring the foot of Queen Maude's range six months ago. Now where are you?"

"I am at the base of Queen Maude's range," came Jimpson's voice, calmly.

"Tell me what you see and what happens."

For an hour and a half Professor Walleck and his assistant listened to the strangest tale they had ever heard. When Jimpson had finished, the professor spoke again.

"You are no longer Dr. Jimpson of the antarctic expedition. You are my assistant, Vance Gibbons, and Vance is Dr. Jimpson."

A puzzled frown appeared on Jimpson's face.

"Tell me who I am not," said the geologist.

"You are not Dr. Jimpson," repeated Professor Walleck.

"I am not Dr. Jimpson."

"When I awaken you, you will not be Dr. Jimpson, therefore you will not be under any hypnotic influence. You will be Vance Gibbons. Awaken, Vance Gibbons!"

Dr. Jimpson opened his eyes. "I must have been sleeping, professor," he said. "I hope you won't fire me for loafing."

Vance held his sides to keep from laughing as he watched the geologist

rise and walk into the laboratory. Jimpson's imitation of Vance Gibbons was done to perfection.

"For the present, Vance, I am going to have the services of two assistants," the professor explained. "To avoid confusion, I think it will be advisable for you to take a trip to the Rocky Mountains for a month or two—until this invasion is disposed of."

"What are you going to do about the invasion?" Vance inquired anxiously.

"For the present, I think I'll play the stock market." The scientist smiled cryptically. "By the way, Vance, if you wish to sell your wige, I think I can get you a good price for it."

"For goodness' sake, Steven, take the thing——" Vance stopped suddenly. An odd expression crossed his face. "But it is valuable," he went on. "I shall not want to part with it."

He heard the professor's deep-throated laugh.

"Keep it then," said Walleck.

THE SPACE FLEET from Pluto landed atop Ross barrier. It had been a monotonous voyage and the travelers rolled out on the slippery ice to stretch their tentacles. Sigov, waving his ligaments in satisfaction at safe arrival, met Brulf at the deserted Eagleston expedition headquarters.

"Is everything ready?" asked the victyl.

"Everything, my victyl," replied Brulf with a wave of his sight tentacle. "The Earth men found here were sent back to civilization with a million wiges. I ordered them to travel in every land, giving crystals to people of importance, leaders of men."

"Are you sure one million wiges is enough?"

"My computations, sire, disclose three psychopower units sufficient to hypnotize a human. In cases of mob hysteria two and one half will do the trick. Our telepathic powers can

throw five units into each crystal and the owner will receive the full force. This force, in turn, is generated in the crystal owner. He passes it on to those he is in contact with.

"There will be some resistance, no doubt, and we calculate only two and one half psychopower will be passed on to nonpossessors of crystals. But our prisoners have been hypnotized to give the crystals to no one who cannot influence at least one thousand persons.

"We get the following: 5,000,000 units given off by possessors of crystals; 2,500 units given off and received by nonpossessors of crystals; total power 12,500,000,000 units. The population of the Earth is not more than 4,000,000,000. We have enough power to hypnotize the Earth's people. Mass hysteria is cumulative, and, as the first million fall asleep, newspapers, radio and other forms of communication will carry on the hysteria until ninety per cent of the population is asleep."*

"Have you been in touch with the progress of events?" questioned Sigov.

"Not for several weeks. I have reason to believe one Earth man, a certain Professor Walleck, is developing telepathic machinery. We can guard our telepathy to some extent, but observation of the entire Earth means sure detection. There is no chance of our plans failing, however."

"We shall proceed at once with our conquest."

Sigov raised his tentacles. Ten thousand brain men of Pluto, assembled on the polar ice cap lifted theirs in unison. Sigov opened a small case, containing a large wige crystal.

"Concentrate!" ordered Sigov. A whistling wail arose ordering Earth men to sleep.

The power of thought waves made

* Boris Sidis in his treatise, *Psychology of Suggestion*, gives a similar formula, which is somewhat modified here, showing the growth of mass hysteria in such cases as the South Sea bubble, Tulipomania, the Crusades and to which might be added the chain-letter craze.

themselves felt. Radio was influenced and power stations reported certain disturbances. Scientists—save the wiley Professor Walleck who was chuckling in his laboratory as he sent messages of warning to the State department at Washington, which was notifying other governments throughout the world—were puzzled. But the world did not sleep. Nowhere was there a suggestion of mass mania. The mind of man was impervious to telepathic suggestion.

"Cease!" ordered Sigov.

The tentacles lowered. The disciplined army of other-world creatures stood motionless. Sigov gave another order.

Without waiting to check the results, the Pluto men, confident of success, filed into the space cruisers.

BRULF, now a hero among his fellow creatures, rode in the flagship with the dictator, Sigov. The flagship was to conquer New York, the world's largest city. Other ships were dispatched to Paris, Tokyo, Berlin, London, Cairo, Melbourne, Shanghai, Moscow, Rio de Janeiro, Lima, Mexico City, Quebec, Montreal and Los Angeles.

From these key cities the conquest was to spread until the entire world would be under domination of the brain men. There would be a great slaughter before the Moon changed.

Philig, sailing for London, soared rapidly toward his destination. Below the forests and deserts of the Earth spread out like a splotched painting. For several hours he burned through the stratosphere. Then he ordered the ship to descend toward the spires of the city.

Scarcely a thousand feet above the city he saw activity below. He could not believe his eyes. The city should be asleep. Suddenly the ship trembled. He clutched frantically at the controls as a bomb burst near by.

The ship sailed away from the city. Bombs followed. Each explosion was

closer as the aircraft guns checked the range.

The ship rolled with the force of the explosion as a high explosive shell struck the cruiser amidship. Brulf had warned the brain men of the powerful engines of destruction on Earth. Philig heard a cracking as the ship broke in two like a match. The shrill whistling screams of terror of the brain men sounded about him.

Then the ship crashed to the ground.

Near Rome another ship landed. But instead of finding mankind asleep, they were greeted by an army. Machine guns mowed down the Earth's invaders, leaving them dead on the field of battle.

Similar occurrences were happening everywhere, as Sigov and Brulf flew toward New York.

Beyond the harbor drifted two battle-ships. The space cruiser drew closer. A long cannon spouted flame and thunder. A shell struck the ship with terrific force. As the smoke cleared away bits of metal splashed like rain into the ocean. Not a trace of the ship was left.

THE WORLD settled down to its routine of murders, wars, business, sunrises and sunsets after that. The attempted invasion was soon forgotten by every one, save a small group of scientists who twirled forks in snarls of spaghetti at another of Professor Walleck's famous dinners.

The group settled back with individual, well-fed looks at the conclusion of the meal. Dr. Jimpson, the toast-master, arose.

"I think Steven owes us an explanation of how he saved the world," Dr. Jimpson said. "I also would like to know how I got the crazy idea for several months that I was Vance Gibbons, his assistant."

Beaming, Professor Walleck stood and fumbled with the silverware. He was not above basking in admiration.

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in fact, he enjoyed it a little too well, but he felt bashful.

"It was not wholly through my efforts," he said with a feeble attempt at modesty. "I am referring to martyrs who sleep as a result of the invasion." He paused while a murmur ran around the table. "I know you thought the invaders were repelled without casualties," he went on smilingly. "But unfortunately we have a few.

"You recall the methods used by the men from Pluto; how wiges were distributed to bring about a mass hysteria of slumber. My assistant Vance Gibbons gave me a warning of their arrival during an early experiment with telepathy. As luck would have it, his mind became attuned with Dr. Jimpson's at the minute they arrived and placed Commander Eagleston's party in their power.

"I suspected hypnosis as the invaders' weapon and when Dr. Jimpson returned from the South Pole I took special precautions to avoid receiving suggestions from him. As you know it is difficult, nearly impossible to hypnotize an unwilling patient. I became more than unwilling—I was stubborn. He could not catch me off guard.

"Vance, however, succumbed and I watched the effects. I saw it was the object of the invaders that each recipient of the wige should keep it in his possession. I manipulated Dr. Jimpson from their control by suggesting he was not Dr. Jimpson and therefore not under control of the invaders. I confiscated his stock of wiges and mailed samples to a score or so wastrel sons of millionaires.

"I picked them from the social register as the most worthless of the people in our land, and consequently the most easily spared. I told each how these simple crystals were bound to become valuable as precious gems and that it would be a good idea to corner the market."

Professor paused for the laughter to die out.

"I then obtained a gentleman's agreement from all newspapers, radio stations and other communicating agencies throughout the world to hold up news of a slumber epidemic for at least twenty-four hours after the first reports were received. I notified foreign governments of the invasion and had traps set to catch the invaders.

"Meanwhile the young millionaires were becoming maniacal over wiges. They organized expeditions. Just as the wealth of the world is centered in a few hands, the wiges became centered in still fewer hands, since the desire for them was greater. Only a few wiges were outstanding at the time of the attack. Even Vance, my assistant, surrendered his.

"With the wiges concentrated in a score of hands their power was greatly reduced. The effectiveness of the plan depended on wide distribution and quick communication of the hysteria. With radio and newspapers suppressed, the mania stood still."*

"The wige millionaires were isolated by their own choosing. They were protecting their hoards in miserly fashion. As a result only about 1,000 persons fell asleep at the suggestion of the men of Pluto. We can spare most of them. They will sleep for many years and when they awaken they will be older and wiser, thus more valuable to the world. In studying out the weaknesses of mankind and selecting a weapon to conquer man, the men of the Pluto overlooked one thing——"

"And that was?" Vance looked to his superior.

"Greed." Professor Walleck chuckled.

* Under the formula given before the power of the wiges, when centered in twenty hands instead of 1,000,000 would be 250,000 psychopower units, even if communication facilities were unhindered. This would hypnotize only about 30,000 persons. Professor Walleck's figure is under that.



Can't Science Fiction be a Combination of Both?

Dear Editor:

Please put this brief message in Brass Tacks. The best type of science-fiction story is the interplanetary tale. To all authors who write stories of other worlds, I want to give this very important advice: before writing any more yarns, read *Through Space and Time*, by Sir James Jeans. Build your tales around facts—not dreams. Remember: one logical convincing story is worth more than a million fantasies. Follow this suggestion, and perhaps science-fiction will become something more than just a joke.—I. M. Wright, Boston, Massachusetts.

We Try to Hit a Medium!

Dear Editor:

If the law of something or other prohibits changing of the amount of matter in the world, then every time a person travels into time, the amount of matter in that person is subtracted from say 1935 and changed, or added to, say 1957, thus violating the law which prohibits changing the amount of matter in the universe, or rather in existence. I claim your magazine is a science-fiction magazine, and that you ought to have, as far as possible, science stories in your magazine—accurate science.

As far as I have gone, the November issue is just about perfect. It must be Weinbaum. After reading the first part of *Blue Magic* I know why the readers have been calling for *Dimn*.—Tom Jackson, 5155 Wornall Road, Kansas City, Missouri.

Generally Speaking!

Dear Editor:

Impressions of the December issue:
Cover: Practically same colors as last month. Figure all out of proportion.

Davey Jones' Ambassador: The first science-fiction story I read, back in 1929, was about subsea creatures. The only difference between

that and this story is that in this one they do not almost conquer the world.

Nova Solis: Nice title. If the Sun ever did become a nova, perhaps Pluto would be left as an incandescent mass. The explosion would surely be more swift and violent than described.

The Green Doom: When we ask for stories as in the good old days we don't want to go back quite as far as this.

The Mad Moon: Amusing.

Human Machines: Is this intended to bring some new information to us? Same goes for this as for *The Green Doom*.

The Fourth-Dimensional Demonstrator: Scientifically impossible, but quite hilarious. I sympathize with the fellow who got tangled up in the tesseract. I once made one myself.

Avatanche: A fair imitation of John W. Campbell.

Forbidden Light: Page 121, line 41: "He damned the north end." Page 38: "That's the Milky Way Galaxy." The author ought to learn some astronomical nomenclature.

Same page: "I thought the sun was the hottest body." Some scientist. Also some scientists in that story, not giving their discoveries to other scientists. Altogether an extremely mediocre story.

I notice that John Russell Fearn has made himself ridiculous by apologizing for his lack of science. What right does he have to say what kind of stories he prefers? He only writes them. We are the readers who pay for the privilege of reading the stories, and if he doesn't write the way we want him to, let him try and sell a story. As to that, the editor is just as much at fault for accepting it.

It comes to my mind at this time that there ought to be some kind of distinction between stories which have real scientific value and those which are just fantastic adventure tales. The term "fantasy" is sometimes used but this seems to denote more of the weird. What would one call a story like *The Mad Moon*, which has very little science in it, yet is more than an adventure story? Stories such as *The Blue Infinity* I like to call "sciencehoey" stories, but that term would not apply to *The Mad Moon*.—Milton A. Rothman, 2113 N. Franklin Street, Philadelphia, Pennsylvania.

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Too Many T. V.'s!

Dear Editor:

I have read Astounding Stories since its rebirth under the banner of Street & Smith. I have also seen its coming to life under skillful guidance, and I can't begin to express my appreciation of your work and the work of your authors and artists.

It isn't always the stories and the sketches that accompany them, but it is the spirit of the magazine itself and the executive work of one individual that makes a magazine a success. One can't say that the other science-fiction magazines publish poor stories, but there are other things wrong.

After reading the December issue I have come to one conclusion that I am sure would improve Astounding Stories. It really does not need much improvement, but why not make it perfect? The general run of stories have good plots and are well written; I have no objection in that direction. But every story that you have published is of the thought-variant type, every story is different—too different.

Now, I think you should include in each issue a more conservative story of the adventure type so that there would be more of a balance in the issue in general. This balance is what the science-fictionists call "the good old days" but haven't quite been able to put their finger on it. With this balance we could more fully appreciate the new thought-variant stories.

I am sincerely sorry to hear that Dold will not be able to be with us for some time, but maybe the rest will refresh his imagination.

I hope to see another story by Don Stuart in your pages. I am convinced that his stories *Twilight* and *Night* are two of the very best science-fiction stories that I have ever read. He completely captured an air of deep melancholy in those stories that makes them classics. To write another sequel to them would spoil their weird charm.

Stanley Weinbaum's *The Mad Moon* demands a sequel dwelling on the former civilization of the "loonies." If written well, it would have it all over *The Mad Moon*, which, I think, is not quite up to the Weinbaum standard.—George Harman, 1432 Elmdale Avenue, Chicago, Illinois.

Ten Best of the Year!

Dear Editor:

Since it is the custom of the critics to pick the ten best novels of the year, at about this time, I've decided to pick what I consider the ten best stories published in Astounding during the past year.

Leading the pack as the best story of the year, was that masterfully written *Twelve Eighty-Seven*, by John Taine. Taine's characters are much more believable than either Smith's or Campbell's. His heroes are not supermen who can do no wrong, but are human beings who make mistakes just like the rest of us do. I hope Taine is good for one serial a year.

Night, by Don A. Stuart, takes second place. This story might aptly be called a symphony in words, so beautifully is it constructed. As a stylist, Stuart is unequalled in science-fiction to-day.

In third place, we find *Star Ship Invincible*, by Frank K. Kelly. It is a wonderfully written story of conflicting emotions. Kelly is especially good at this type of story. Isn't he about due for another?

Alas! All Thinking! by Harry Bates, ranks next. Although the ending is depressing, it suited the mood of the story perfectly.

Next we find *Greater Glories*, by C. L. Moore. Miss Moore creates an atmosphere in her stories which grips the reader until the end. Fantasy of this high type is not out of place in Astounding, but none by Clark Ashton Smith, please.

The Son of Old Faithful, by Raymond Z. Gallun, ranks next. This was an excellent de-

scription of the reactions people of different worlds might be expected to undergo when they meet for the first time.

The Far Way, by David R. Daniels, was a big story in a few words. It is seldom that a story this short can be called great.

Parasite Planet, by Stanley G. Weinbaum, was the best adventure-type story of the past year. Weinbaum is particularly good at writing this type of story.

Proxima Centauri, by Murray Leinster, was an excellent character-adventure story. Murray is about due for another novelette, isn't he?

Last, but not least, *The Phantom Dictator*, by Wallace West. This was a different story, both as to plot and ending.

There were many other excellent stories but these ten were, in my opinion, outstanding. If you can keep the magazine as well-balanced as it is at present it should satisfy both the adventure and the science seekers. I still have hopes for a quarterly.—Richard H. Jamison, 5141 Dresden Avenue, St. Louis, Missouri.

A Letter to the Art Editor

Dear Mr. Lawler:

This note should have been written you at least two weeks ago and would have been except for a series of unforeseen occurrences over which I had no control and which placed me in a position where I was unable to make definite plans for the future. At three separate times I've been on the point of returning to New York and each time had to give up the idea.

Really, the most pressing reason for my staying on here for some time longer is that my father has come to depend on me almost entirely and I fear my leaving him at a time like this might break him up badly and possibly result fatally, as his heart isn't any too strong.

When I left New York, I fully expected to be back and at work by this time, but these unforeseen circumstances which have developed make my eventual return indefinite. When I do get back, I'll just have to hope for the best and pick up whatever work there is to do.

On looking over the last issue of Astounding (December) I was glad to see that you have secured good men to do the work. The illustrating of the magazine has worried me constantly while here and somehow I've felt guilty of leaving you in a hole. It's a real relief to know that this was not the case.

Before closing I want to thank you a great deal for the work you have given me as well as for your kindness and the patience you have shown when things didn't go as smoothly as they should have. Perhaps, when this unavoidable situation here is straightened out, you may be able to use me again. I sincerely hope so.

And now, let me wish you, the magazine, and every one connected with it the best of good fortune for the future. Once more—thank you! Very sincerely, W. Elliott Dold, Jr.

Was It That Bad?

Dear Editor:

Somehow the December Astounding didn't have much appeal for me. *Davey Jones' Ambassador* and *The Mad Moon* are two stories that I did enjoy, however. Murray Leinster slipped this time with a rather old plot, not written up differently enough to overlook its age. The other stories were less than the average on the most part. Just an off month, I suppose.

Not only that, but you have to give us that bad news about Dold—one of the best illustrators of science-fiction—and a year is an awfully long time. Well, let's hope it's sooner than a year. I'm certainly glad that Wesso is coming back. He should have done it sooner.

The other artists used in the December issue aren't so good. In fact, some of them are terrible. Please add Frank R. Paul to your staff of artists. I'm sure that you could get him to do some of the interior work. I didn't care so much for Brown's cover this time, or that horrible cut for the story titles. The twenty-cent sign could be made smaller and stuck in the upper left-hand corner. Astounding Stories starts its seventh year with the January issue. Congratulations!—Jack Darrow, 4224 N. Sawyer Ave., Chicago, Illinois.

Opinions Are Important!

Dear Editor:

An issue or two ago, you requested criticism on Astounding Stories. I have noticed several things about the magazine but have refrained from mentioning them because the magazine has slowly and steadily improved since its revival.

My chief adverse criticism is concerning the readers' corner, Brass Tacks. Puerile, insipid, and thoughtless letters should be left out. They do not even give an insight into the readers' reactions to the various stories. They merely take up space and disgust the more serious readers.

About the science in the stories: it should be of two types:

1. The known and logical science of our civilization.

2. Imaginary developments on our own sciences with a few excursions into fields that are seemingly forbidden.

I am strongly against the use of religious or metaphysical ideas in stories. They have no place in any rational world. I refer particularly to *The Einstein Express*.

Forbidden Light was only C Class. The ideas were not entirely new. It was primarily an adventure story. *Davey Jones' Ambassador* was by far the best story of the issue. It had the proper balance between science and fiction. *The Mad Moon* was an interesting adventure story. *Nocturnal* is old stuff with very little that is interesting or new. *Human Machines* is a little better. The problem of the insurgent against a change in life habits is always interesting. *The Fourth-Dimensional Demonstrator* added the right amount of humor to the magazine. *Acidanche* tried to be dramatic but failed.

Blue Magic is another of the extremely interesting stories by Diffin—pure adventure but enthralling. Although a scientist, my chief hobby is adventurous science-fiction. I noticed no thought-variant story in this issue. They are usually the most interesting.

In closing, I may say that I eagerly await the appearance of Astounding each month. Forget all the insane suggestions about bindings, smooth edges, slick paper, and concentrate on getting good stories, that have new ideas and good adventure in them.

You asked for criticism and this is a long letter as a result.—Thomas S. Gardner, P. O. Box 1924, Knoxville, Tennessee.

The Regular Course—and Then Some!

Dear Editor:

There have been so many requests lately for Astounding to publish a reprint, a quarterly or so semi-monthly that it would seem to me that it is time to do something about it. For my part, I am not so sure that it would do to put out two issues a month, but I do think that a reprint or quarterly would be very welcome to the readers of your magazine. In every science-fiction magazine, every month, there are numerous requests for one or the other of these and I think the circulation you have built would be greatly increased by an addition of some sort.

I feel, and several others readers have expressed the same opinion, that one issue of As-

tounding a month is not enough and that we need something to go with it. We have been eating of the regular course of our science-fiction dinner for so long that we would now like to have some dessert to go with the regular meal. How about a quarterly?

I notice in your editorial for the November issue that you have a chance to get another article along the same lines as *Lo!* If this is possible, by all means do it, for I like *Lo!* very much, and while I wouldn't like to see articles like this in every issue, yet one in the near future would be just the thing.

I have been reading science-fiction for a long time, and as long as a story is well written and is science-fiction it doesn't make any difference to me whether it has little or lots of science in it. I like the stories of Smith far better than those that have less science in them.

On the other hand, I have read many stories which have had very little science but were much better than some that had half the laws and theories of my college physics books mixed up in their plots. I still think that *Rebirth* is the best science-fiction story I have ever read.

By all means keep Brown on the cover illustrations. The paintings on the covers of Astounding are far better than those on any other science-fiction magazines. Brown manages to get enough color into his paintings without making them look unreal. Not only that, but his figures are more lifelike than those of the other magazines. I think that a sensible picture will draw more attention than one that looks like a circus billboard.—James A. McCormick, Jr., 328 Graham St., Elkins, West Virginia.

The "Demonstrator" Gets a Victim!

Dear Editor:

Forbidden Light was a little too hackneyed for my sensitive stomach, but, outside of that, the December issue is plenty smooth. Two stories, in particular, have stuck in my memory: *Mad Moon* and *The Fourth-Dimensional Demonstrator*. *Mad Moon* is a return to the level-headed Weinbaum style, after that rather fluffy romance of last month.

The Fourth-Dimensional Demonstrator left me laughing, of course. In fifteen minutes, I calmed down enough to reread it. If I don't watch out, I'll be doing it again. More like this one, and you can boost your price to fifty cents and I won't even squeak.

I see by a letter from Mr. Holmes H. Welch that I'm crazy. I've suspected it for a long time, Mr. Welch. Thank you for fixing my convictions. By the way, how did you come to discover Astounding? You must read it occasionally, else how come your knowledge of Fearn, van Kampen and all the rest?

Can it be possible, Mr. Welch, that you are tarred with the same disintegrator, that you also, "are a mind so inferior that you seek recompense by slinking away to your super-sympathetic dream world"? Are you, perhaps, speaking from experience? Have a good look at yourself. See if you are in a fit condition to cast the first stone at Astounding's crowd of futile nonentities?

Keep Weinbaum, Gallun, Vincent, Smith, Campbell and Taine at work, not to mention Jack Williamson and Nat Schachner, and you'll keep this reader satisfied.—W. B. Hoskins, 65 N. Pleasant St., Oberlin, Ohio.

Fantastic Fiction Has Its Place!

Dear Editor:

For a long time I have intended to write expressing my gratification at the improved tone of Astounding Stories. I consider your magazine as the foremost standard bearer of this type of fiction.

I am unable to understand why fantastic fiction is generally denied literary recognition.

Since, by its very nature, fiction is imaginative, why should there be any limitation? Of course many stories of this type have been so poorly written as to discredit fantastic fiction in general.

Far too many of them have no real plot at all but are mere elaborations of a single hackneyed idea, such as the scientist making a monster and losing control of it, or a mad scientist who seeks to rule the world, but is blown up, with all his fiendish equipment, in the last chapter. Fantasy alone, is not enough. Fantastic fiction like other forms of literature must have depth, atmosphere, convincing plots, and characterizations.

I differ very strongly with Mr. Welch, who writes that science-fiction fans are largely lunatics trying to escape into the dream world of imagination. I consider that the imagination is the greatest of man's attributes, the one thing that separates man from animal.

Nothing has been accomplished but what existed first in some man's imagination. A properly developed and trained imagination inspires boldness in thought and action, rather than weakness. I cannot find words to express my appreciation of *Night*. Hang on to Don Stuart! *Derelict* also was glorious.

The Lotus Eaters was splendid! What an imagination Weinbaum has! All is brought out in such a matter-of-fact way. Give us more stories of the philosophical type.

Forbidden, *Light* was punk—only another wrecker-of-civilization story mounted on the plane of an adventure story.

Nat Schachner's stories are uniformly bad. At least, he is consistent in this. As a special favor please fire Frank Belknap Long. His stories are a little too tenuous and hazy, too many vague menaces and frightening phantoms never fully explained.

More power to C. L. Moore! Probably the reason some people do not read fantastic stories is that they are bound to make them think—that being a function as many shun as they would the presence of the evil one—consequently science-fiction is ruled out. How's that for a theory?—Haskell Benton, Iowa Park, Texas.

Objection Sustained!

Dear Editor:

Your editorial comments on helpful criticism have moved me to submit a few. Brown has turned out his third really fine cover. When the *Cycle Mel* was the only really poor story in this issue. The fundamental theory was perfectly correct, but that the time cycle should end and begin at the blank wall of oblivion, is foolish. Since it was the same cycle all through, how was it that the men named in the story had not existed before at the dawn of the world?

Also, Polaris was not the polar star in those days; the author completely forgot the precession of the equinoxes. Furthermore, the life of any one planet is but a fraction of a second of eternity, and thus the cycle could not possibly return to the beginning of things in time to save one measly solar system.

I know that there's a lot to say no but I still want Hawk Carse and John Hanson stories. Since my last epistle, I've seen several more requests in Brass Tacks. At least, make an experiment. Jim Bilash, 131 Harrison St., East Orange, New Jersey.

A New Suggestion!

Dear Editor:

After reading Brass Tacks for over two years, and after having one of my letters published, I just can't help writing another. I would like to put in a word about the outside of Astounding Stories. On the end you have a little square that says "160 pages." To my way of reasoning that is merely a waste of space. We readers don't care so much for the number of

pages so long as the stories are good. Now in this little square, why not put the name of the best story or the name of a beginning serial? Then, when we readers go to reread some of the stories, we can see which one has the one we want to read.

A word about the November issue. I don't believe the issue was up to your standards at all. I don't believe that red and black make a very good color combination. I mean the shade of the Red Peri's space ship. Then these two colors, in direct contrast with white and yellow, do not appeal to me.

Now the stories. The best, to my way of thinking, was *The Red Peri*, *I Am Not God*, and the new serial *Blue Magic*. The rest were not up to standard. But all the issues can't be perfect and most of them are. I remain a satisfied science-fiction fan.—Randall O'Brien, 2124 Rockingham Rd., Davenport, Iowa.

We Take It On All Sides!

Dear Editor:

Yes, I'm back, and I'm sorry I've got to slam you. It's about as pleasant as having a tooth out, for I love my Astounding—but skip that. You, editor mine, are too obliging. A few months ago, the cry was "Give us more adventure, we're tired of super-science. Back to those happy days!" So you complied and now look. You took us too literally; don't you yet know that the great big public is just a great big sap? It has to be spoon fed, doesn't know what it does want. By the old cave-man fiction, we didn't really mean the same old stories. Yet that's what you're giving us—same old hack stuff! In one word—medieval!

And there haven't been new treatments! Look at *The Red Peri*! A good story, nicely written, but not one new idea—not one! It wasn't worth the tradition Astounding Stories has been building since '33. Shades of Colossus and irrelevant! Not a thought-variant in months, with the possible exception of *The Adaptive Ultimate*!

Cut down on adventure and try to improve your short tales! As for Schachner's newest: Mr. Schachner, I am ashamed of you! I don't intend to be irreverent, but the title should have been *I Am Not Good*. And the November cover, that mess of exhaust from the Red Peri's jets looked as if the cover had smeared. Well, I forgive Brown on the principle that "the king can do no wrong," as every one says he's tops. Still, a cat can look at a king and people who live in glass houses get all the breaks.—Sidney Birchby, 38 Nightingale Ave., Higham's Park, Essex, England.

We Try for a Balance!

Dear Editor:

This afternoon I began with *The Red Peri* in the November issue, and needless to say, I've only stopped now that I've read through the whole magazine. Really, it's a wonderful issue—the whole of it—a result obtained by a very careful balancing of the different types of tales that make up science-fiction. And it's a change, too, for the majority of the stories lean toward the adventure type. After so many thought-variant themes, with action decidedly in the background, the difference is certainly refreshing.

Blue Magic brings something that has been absent for so long that I had forgotten that it existed. It sounds very much like "save the earth while rescuing the beautiful damsel" sort of plot, but with Diffin behind the guns, it's enough to make me wish that Astounding has already gone semimonthly so that I could read the next installment in two weeks.

Blue Magic is, I think, the main reason I'm writing this letter, in spite of the fact that I began by mentioning Weinbaum. I'm not so

sure that too many stories in the vein of *Blue Magic* and *The Red Peri* would go over so well but I, at least, am awfully glad to see them in this issue. They make one think of the old days when science-fiction was all blood and thunder; and after a couple of years of heroes going through their appointed tasks with very little red haze to obstruct their collective vision, it seems good—very good.

The Adaptive Ultimate was a new idea. However, it seems to me that it would be interesting to read a story where the superperson did get hold of the movement of things; might people not have been better off if all of them had been given injections of the adaptive serum? I am very much pleased with this month's issue.—David R. Daniels, Consolidated Ute Co., Ignacio, California.

Here's One Pleased!

Dear Editor:

I have just finished reading the November issue of *Astounding* and I have to sit down and write you a letter of commendation. I believe it is the best issue you have published so far.

The Red Peri was excellent. I am, in a way sorry that this story calls for a sequel, because sequels are rarely as good as the original.

Ships That Come Back was a good character study. I believe I would have liked it better had the mysterious force been explained a little.

When *The Cycle Met* was, in my opinion the poorest story in the magazine. There is in the Einstein theory, as far as I can see, no support for the idea set forth in this story. If the solar system were suddenly to revert to a period a thousand years previous, why would the men and buildings not also revert?

Blue Magic! Man, oh, man! Am I glad to see Diffin back in the fold? He was always one of my favorite authors and after reading the first installment of this story, I do not think he will fail to hold his place in my esteem. And don't let it be as long between this story and his next one as it was between this one and his last one.

The Lichen From Eros was another of Mr. Long's delightful stories. The author solved a difficult problem in a very ingenious manner, in conquering the seeming unconquerable. But he states in the beginning that adapted traits were permanent unless superseded by other adaptive traits. Then, at the end, when the operation was performed on Kyra, she remained beautiful until the gland was removed, then reverted to the original state. Should she not have retained whatever adaptive characteristics she possessed at the moment of the operation?

I was not greatly impressed by *I Am Not God*. After I had read about four pages of the second installment, I could have laid aside the magazine and written a conclusion just like Mr. Schachner's.

The cover was the best in many months. I am glad to see that the demand for twice-a-month issues has died down somewhat of late. I would rather see a quarterly or an annual, or both.

Well, Mr. Editor, my prime intention was to write you a letter of praise, but I am afraid my good intentions got lost by the wayside. However, in spite of all the faults which are getting fewer all the time, I still like *Astounding* Stories better than any magazine I have seen, and if 1936 shows as much improvement as 1935 has, *Astounding* will be the most famous magazine in the world.—J. J. Johnston, Mowbray, Manitoba, Canada.

Hints and Answers!

Dear Editor:

The November issue was a marvel! *The Red Peri* was a fine example of literature and *The Adaptive Ultimate* was refreshing in its selec-

tion of adaptation for plot. I was disappointed when I saw that *Blue Magic* had three-tored monsters. I hope Charles Diffin overcomes that in the story, for monsters are a rehash and should be relegated to horror stories.

I believe that, on the whole, seasoned science-fiction readers rejected *The Blue Infinity* and the new readers are the ones who accepted it. Am I right?

Howard V. Brown is doing fine work on the cover. Those who call his work "glorified lollypop" must have a sweet tooth. If they'd think of space or the unknown when they looked at the cover instead of the candy shop, they would do better.

I think a science editorial would be welcome, but don't be afraid to delve deeply into the subject. A general discussion is not always satisfactory.—Dale Tarr, 908 Vine St., Cincinnati, Ohio.

Good and Bad!

Dear Editor:

It has been a long time since I have written, but I still can tell an excellent story when I see one. I am referring to *The Adaptive Ultimate*, by John Jessel. Either the author's debut is extremely auspicious or it is another pseudonym for a top-notch author. The story contained two desired goals of a good science-fiction story: science and fiction. This combination has been achieved by very few science-fiction writers.

To start at the cover, it was good and bad. I am afraid Brown let his imagination run away from him, for I could not see where that beacon-like globe on the top of the tetrahedron came in. Although *The Red Peri* was a good story, it could never measure up to Hawk Carse of the good old days.

Reading *Fruit of the Moon-Weed* the beginning made me feel sick, for it was terrible, but the ending was so well inserted and unexpected that it balanced, and the story turned out pretty good.

Ships That Come Back was indeed reminiscent of the bygone days. It was well written and succeeded in its aim: to describe space traveling in the raw. The binding of magazine is O. K. with me.

When *The Cycle Met* was fair. David H. Beaumont is evidently a beginner, yet shows promise.

Frank Belknap Long's *The Lichen From Eros* started out slowly—which is a bad way to start out—then gathered momentum and was excellent in spots, but the climax played itself out and the end was slow like the beginning. However, I like Long's work.

I Am Not God was like *The Adaptive Ultimate*—an excellent story. Nat Schachner is the master of science-fiction. The story is a combination of good fiction and plausible science, plus good psychology. Schachner is always welcome.

Concerning the editorials: I think it would be good to have them, but their length should never exceed one page. The subject of discussion can vary from anything scientific to unproven theories and much discussed hypothesis. Yours till *Astounding* is a semimonthly.—Raymond Peel Mariella, 5227 Chancellor St., Philadelphia, Pennsylvania.

A Veteran Approves!

Dear Editor:

I have been reading good old *Astounding* for the last five years. That rather makes me a veteran, doesn't it?

As a whole, I think you have done a good job. But, I did like Dr. Hanson's stories and I don't see why you don't publish them again.

In a new magazine, one always makes mistakes. Now I like a little adventure or drama, to sort of keep up the spirits of the story. But why do you have to have such stories as *Islands of the Sun*, *The Lady of the Moon*, *Blue Magic*, *Fruit of the Moon-Weed*, *Princess of Pallia*?

I Am Not God was very interesting, and, even

though fiction, I think quite possible. *Intra-Planetary* was another interesting story, and was written surprisingly well. When the *Cycle Met* was an excellent short, in fact, too short; it was a sequel to a previous story, I believe. *The Red Peri* wasn't so bad, although I wouldn't call it very much science-fiction. *Twelve Eighty-seven* comes to a conclusion with a bang. I enjoy your better short stories.

I have studied science for two years at school, and couldn't get enough of it. Your magazine is a young one and has already, as I perceive from your cover, the largest circulation of any science-fiction magazine. You want that to continue, so why not devote more time to a careful selection of short stories? Also how about less of the hero pulling his ray gun and killing hundreds of Venusians and escaping from some place that no one could ever possibly escape from?

Give your fans plenty of sequels. Can't you tell that they like them?—Samuel D. Chempreis, 322 Pine St., Waterbury, Connecticut.

We Try to Improve!

Dear Editor:

That was a fine November issue you put out. I have only read the short stories so far, but they are certainly O. K. Why didn't F. B. Long, Jr., make a novel or novelette out of *The Lichen From Eros*? And since when has it been known as two asteroids instead of one?

What has happened to your new interior artist? I think he knew his stuff. Doid isn't so bad, but his drawings are dark. Marchioni is good.

To Raymond Hood: You say the editor gave himself a good bit of self-praise. He is only telling in his own words what the readers say. And what do you know of Williamson's ability? His story *The Galactic Circle* was very good but did not, to my mind, compare with *The Legion of Space*.

I think your magazine is improving steadily. Make all the improvements you can. I am not in favor of a semimonthly.—William E. Stocks, 1107 Bingham Rd., Pittsburgh, Pennsylvania.

He Likes It—But—

Dear Editor:

Thank you for presenting us with an all-star issue on the anniversary of *Old Faithful*, *The Mightiest Machine*, and *The Irrelevant*. This is one of the best issues that I have read for a long time. Here is my opinion of the December issue:

Forbidden Light: One of the best, but Mr. Montague does not explain how the Panchette family got the forbidden light, if all of it is absorbed by the stratosphere.

Devey Jones' Ambassador: Really a masterpiece. Instead of making his characters from different places inhuman monstrosities, which mean to conquer the world, he gifts them with enough reason to see both sides of every case. There is one mistake: How could the ovoid stand the decrease in pressure?

The Mad Moon: Written in the best Weinbaum style. He is too generous with his atmosphere, however. Several of his moons have not enough gravitation pull to hold an atmosphere.

Nova Solis: An excellent short story.

The Green Doom: Pretty good, but don't you think the theme is hackneyed?

The Fourth-Dimensional Demonstrator: A very good, humorous story. Let's have more of them.

Avalanche: Good. The theme is old.

Van Houten: Don't use that amateur scientific stuff. There should be enough proved scientific theories to back up the fiction.

Burhans: An excellent idea about rocket-ship models.

Martin: I agree with you on *Night*. It was one of the best science-fiction stories I have ever read.

Ellison: Harl Vincent is good for many more stories.

I am for the blood-and-thunder stories if they are backed up by science. After all, there are many kinds of fiction, but we want science-fiction.

Please make *Astounding* a bimonthly.—Harold Kessler, 3220 12th Ave., Brooklyn, New York.

Remember Hawk Carse?

Dear Editor:

In the November issue of *Astounding*, I found in the Table of Contents, the following sentences under the title of *The Red Peri*: "You have approved of Weinbaum's stories. He has gone forward in this one to a point reminiscent of— You tell me!" Now, maybe I'm just a bit thickheaded, but I'll be hanged if I can figure out the meaning of it. Perhaps you will explain?

In the March issue of 1934, we find a list of stories and authors that seem to stand out from all the rest, such as, *Rebirth*, *Born of the Sun*, *The Time Impostor* and many other good stories. Maybe it's me. I might be mistaken but it seems to me these stories are much different from the ones we have now. They seem to be better and newer, original, if you know what I mean. The ones we have now are original, to be sure, but they don't have that fascinating, breath-taking newness about them. Are we running out of stories like this?

The information I asked for in the last month's issue, was received with a hearty welcome and for those who wish to know, the story *Into the Hydrosphere*, was written by Neil R. Jones. Is there any chance of getting him? My letter seems to be composed of a bunch of questions, but if you will bear with me and print this letter in *Brass Tacks* so we can see what the views of other readers are, I will be very much obliged.—Ross Wilson, Jr., R. F. D. 2, Box 89 A, Chesterfield, Missouri.

Well! Well!

Dear Editor:

At last it has happened! The impossible has been accomplished! We have at last seen a drawing which shows the planet Earth, not with the ever-present Western Hemisphere in the featured position but with Africa plainly visible. How did this happen? Where were you, dear editor, when they slipped this bit of heresy into good old *Astounding*?

In case you don't know what I am talking about, I shall elucidate: If you have good eyesight, you will see on page 53 of the December, 1935, issue of *Astounding* Stories, in the upper right-hand corner a little white patch showing between the mountains and right over the middle "loonie's" head, the planet Earth with the continent of Africa plainly visible. Also; if you look closely you will see parts of Europe and a tiny little bit of Asia.

First: I want it understood that I do not ever expect to see this letter in *Brass Tacks*. In fact, I do not even expect it to be read. What is more likely is that it will be thrown into the wastepaper basket after a prolonged acknowledgment has been made of its receipt. I have grown up with the firm belief that you write all of these letters yourself and that you never print anything that you receive. So much for that.

Tops, in my opinion, is *The Mad Moon*. In this I believe Weinbaum is better than ever before. In this he has done away with one of his characteristics that is a source of constant annoyance to me. He has made his heroine have a little bit of sense—not much, but a little. Which is more than I can say for his better-known "Patricia." If he would only give his feminine characters some good sense, he would be, to my way of thinking, one of your outstanding authors. He has a very vivid imagination, but with it he has the ability to make his stories

ries seem realistic, despite the fantastic creatures he invents. He makes it seem absolutely possible that there might be a race of loonies or, to use the scientific words, Lunae Jovis Magnificantes, that there might be a parcat of a slinker.

This is a wonderful quality for an author to possess. Burroughs has it—so has Merritt—and so also has Weinbaum, and if it were not for the one little fault that he has, which I mentioned above, he would be splendid, colossal, superpic, and dozens of other things.

Blue Magic got off to a dull start, but is picking up rapidly. *Forbidden Light* was a little slow at first but ended with a bang-up finish. *Davey Jones' Ambassador* was good. *Nova Solis* was pretty good and so was *The Green Doom*. *Human Machines* and *Avalanche* weren't so hot. Aside from that, the issue was O. K.

The Skylark stories are A 1. Let us have more of them by all means. Don Stuart is swell. I would like to see some more of his stories.

I am looking forward to *Smothered Seas*. Both of these authors are favorites of mine. I am very sorry to hear about Elliott Dold. Yours for a bigger and better Astounding.—A. A. McNamara, 604 S. St. Andrews Place, Los Angeles, California.

Checking Up!

Dear Editor:

This is the first time I have ever written any magazine the first day it came to the news stands. May a young but experienced reader make an attempt at answering a few epistles which were printed in Brass Tacks of the December Astounding? As the stories are all excellent, there is no need of my writing the pros and cons which, undoubtedly, have all been said before.

Van Houten: Your idea concerning science-fiction on the radio is a swell one.

Rothman: You told me that *Twelve Eighty-seven* is science-fiction; evidently you referred to my letter of October. I agree with you heartily; *Twelve Eighty-seven* most certainly was science-fiction. But if you will go over my letter a little more carefully, you will notice that I said that the aforementioned story is not the science-fiction type, meaning that it is not the sensational type that makes every science-fictionist heart beat faster.

Welch: Our broad-minded editor printed another of your missives which again insults the intelligence of us readers. True, science-fictionists are alighty insane if you call abnormal mentality, insanity. We do not have inferior minds. I have found that to be true through my correspondence with Douglas Blakely, Bob Cloud, Ramon Alvarez del-Ray, and others of a high mental caliber. How can you say such a thing after reading one of Ramon's mighty epistles, or are they too far over your head?

Pilmsoll: I have never yet seen a white corpse that looked like the one C. K. Thomson drew for *Intra-Planetary*. If I ever do isolate a freak corpse, I will spend an hour or so over my microscope in preference to seeing the latest horror movie.

Our magazine is a shining proof that hard work, discretion, and applied brains, can bring out perfection. You have tried hard to please us, editor, and your success has been greater than has been anticipated.—Willis Conover, Jr., 280 Shepard Ave., Kenmore, New York.

He Favors Jessell!

Dear Editor:

My primary reason for writing this letter is to compliment John Jessell for writing that superb story *The Adaptive Ultimate*. That story was a classic—much better than Campbell's or the others. For originality, science and interest it was unsurpassable, and it was written by a newcomer, too. In my humble opinion, he already ranks with the top-notch authors.

I notice many readers asking for the return of Hawk Carse and John Hanson. Why not? I also agree with the bunch clamoring for Keller, Wesso and Paul. Wesso and Paul are really good.

What happened to the semimonthly plan? I hope you do not publish any more blood-stream stories. The first few were passable, but now they are monotonous.

Here are some suggestions to improve the appearance of Astounding:

1. Print the authors' pictures.
2. Smooth the edges of the magazine.
3. Get Paul, Wesso, and Muller to illustrate.
4. Do not be afraid to show how good you are! Robert A. Madle, 333 E. Beigrade St., Philadelphia, Pennsylvania.

No Science, but "Skylark" Was Good!

Dear Editor:

Your editorial in the December issue contains an intriguing mixture of good and bad news. I was very sorry to hear about Dold's illness, and hope that he is back with us soon. However, every cloud has a silver lining. The silver lining in this case being your announcement of Wesso's return. This is the best news I've heard in a long time. In my estimation, Wesso was, and is, the greatest of science-fiction artists.

It's been a long time since I've read anything like the delightful nonsensical tale of *The Mad Moon*. Just how does Weinbaum set about the business of manufacturing one of his plots? The screwy characters emanating from his burning cranium belong in Baum's Fantastic Land of Oz.

About the proper balance of science and adventure in your stories: My vote goes to the adventure. The wilder and woolier the stories, the better I like them. I must admit that I don't know a thing about science, and all I get out of the really scientific ones is a pounding, screaming headache. However, I really enjoyed Smith's last Skylark story, which did contain plenty of science.

The fellow who illustrated *The Mad Moon*—Thompson, I think,—has caught the spirit of the yarn perfectly.—C. E. McGonicle, 1019 Middlesex St., Lowell, Massachusetts.

A Joyful Return!

Dear Editor:

A constant reader of science-fiction returns home after three months' absence to find the October, November and December issues of Astounding waiting for him.

First he picks up the October issue: "Well, that's an interesting cover. Brown always did good work anyway. Let's have a look at the contents page! Schachner, Stuart, Daniels, Weinbaum, Ross, Gallun, Corbett, Kruse and Haggard! What a line-up!"

Then the November issue: "Knock me over with a feather! What happened to Brown this month? That tan space ship looks terrible! *Blue Magic* by Diffin! That is a treat. Weinbaum again in *The Red Peri*! Bring on his stories, editor; they don't bore me. Another Binder story! More Haggard!"

Now the December: "Well, this is better! Brown is at his best this time. It reminds me of the masterpiece on the May, 1935, cover. Keep your golden paint materials at work, Mr. Brown. What a Christmas present! More Weinbaum, Haggard, Diffin. In other words I am satisfied!"

Let's have more Leinster, Fearn and Weinbaum! *The Fourth-Dimensional Demonstrator*, *Bisc Infinity* and *The Red Peri* were all tickets to a delightful evening. And, by the way, did this fellow by the name of J. George Frederick drop off the map? Bring him back, editor.

I can truly say that Astounding is getting better every month but like hundreds of other readers I have favorite authors whose stories do

not appear in your magazine. What about David Keller? Babback, P. Schuyler Miller, Leslie E. Stone, and Henry Kostokes?

I know that these authors have been asked for before, but if we keep begging, maybe some day you will bring them back, along with those twice-a-month issues.—John Chapman, 500 15th Ave. S. E., Minneapolis, Minnesota.

How About a Sequel?

Dear Editor:

After having closed the cover on your November issue of *Astounding Stories*, I realized that *The Red Peri* is about the best novel that you have published for some time. This letter is a request for a sequel to *The Red Peri*. The author advances a startling theory, which, although contrary to common belief, I think has reasonable foundations. His graphic method of portrayal only serves to make the story more enjoyable.

Diffin's new serial sounds like a corker, and after skimming over the second part of *Blue Magic* I am sure that this serial will be fully as good as *Twelve Eighty-Seven*.

I hope that you will keep up the high caliber of your stories and here's wishing for a sequel to *The Red Peri*.—Edward Alpert, Donald Bragman, 402 South Crouse St., Syracuse, New York.

Thank You!

Dear Editor:

I wish to compliment you on the December issue of *Astounding Stories* for its most excellent variety of stories. I believe Mr. Weinbaum's *The Mad Moon* and the artist who illustrated it should be credited with the best story and drawings in the issue.

You have indeed progressed greatly since Street & Smith have taken over the magazine. I am sure that Mr. Dold will be missed by us all, but here's wishing him a speedy recovery. An artist of his caliber is second to none. I have every copy of your magazine on file, back to the beginning, and loan them to my friends only under solemn promises to return them as quickly as possible.

May we have Hawk Carse and Seaton and Crane and a few more of the scientific-adventure type? Here's wishing you the best of luck, and never mind the staples or edges—if it's the inside, not the outside, that we readers are interested in.—Bayard L. Clark, Box 1228, Springfield, Massachusetts.

How About This Suggestion?

Dear Editor:

Wow! I'm taken back a bit by the December issue. Even if it's doubtful that I'll get into two consecutive issues of *Astounding Stories*, I want to tell you, editor, that you have done a good job. Every one of the stories was from good to excellent and the illustrations were all perfect. The cover illustration wasn't so hot, but it'll do.

The excellent group of the collection of masterpieces in the magazine were *The Mad Moon*, *Dacey Jones' Ambassador*, and *Avalanche*. *Nova Solis* just missed because the ending was kind of flat and toneless.

The rest, yes, even *Forbidden Light*, were trailing because of various reasons. *Forbidden Light*, because of the weird-story aspect; *Green Doom*, because of an age-old plot; *The Fourth-Dimensional Demonstrator* was interesting and different, but it seemed too trivial. *Human Machines* was worth about a dime a dozen, but it was well written—the only thing that saved it.

But, gee! From one extreme to another! First we get too much science and kick. Then you give us not a thought-variant in the lot! I don't call that fair—even to us blood-and-thunderers.

The exclamation at the beginning of the letter was for the idea submitted by Charles Burhans about the models. I am also a model maker and I think the idea is a honey! I'm getting sick of airplanes and I think that space ships and such is a very good substitute. These small plans have made a big hit in the air-story magazines, and I think it would give *Astounding* the extra kick it needs to put it in the lead, permanent, once and for all!

Please discontinue your practice of telling the names of the coming stories. It takes away all the suspense of opening the cover to the Contents Page and eagerly scanning the new tidbits of pleasure. Now all of that is gone, if you keep on with it. There is an alternative, you know!

And please tell Brown to remember that we don't want impressions of scenes on the cover; we want scenes!—Raymond Van Houten, 26 Seelye St., Paterson, New Jersey.

From a Faithful Disciple!

Dear Editor:

I have avidly followed the fortunes of the old *Astounding*—saw her rise and fall and was very much pleased with the regenerated magazine. The thought-variant idea was good and produced some wonderful stories. As I say, I've had my finger on *Astounding's* pulse for a long time in silence, but now I have a few bricks to hurl.

I do not think your December issue was up to par. Brown's animated gingerbread man on the cover was terrible, no less, and the novel that it depicted—the less said about that the better! It was a childish nightmare! I like Charles Diffin, but think some one else must be writing *Blue Magic*. He is capable of something much better.

For Weinbaum, I have nothing but praise; his stories fairly sparkle, all of them! He is your one author who realizes that too much detail will spoil a story as quickly as vagueness. His nomenclature is so matter-of-fact as to seem an actuality, and his breezy manner of bringing in the romantic is not at all sticky.

Leinster's satirical effort was fair, and with the possible exception of Gallun's "fish story" the rest were all just mediocre. I will say the plots were all good—they've stood the test of time. Whatever has become of Cummings, Wandrel, Starzi, and Schachner?

For us childish folk, couldn't you try an occasional interplanetary? I would like to hear from the miss from Mansfield who was, or is, a neighbor of mine. Any one who cares to take the initiative to write, I will be glad to write to. Looking forward to next month's *Brass Tacks*.—R. W. Parr, U. S. S. Sandpiper, San Francisco, California.

The Good and the Bad!

Dear Editor:

I formulate a dusty manuscript to grace the archives of your files. One from the misty intricacies of my cerebrum.

I just finished reading the December issue of your magazine, and was dissatisfied with only two of your stories. I'll give a treatise on those first. *Forbidden Light* had too much "daring" and "dear" in it. Any supposedly cold, practical scientist would not be what he is if he falls in love with a sob sister like the one here.

There is not the slightest resemblance between the cover illustration and the inside picture illustration of the monster carrying that piece of ice. Also, it would seem slightly out of reason for the monster to be strapped to the top of the car that he so easily slung at the ice house.

Dacey Jones' Ambassador brings out a new theory and the science of the story seems to be brought out well. I can say that this one came up to my expectations.

The Mad Moon gives one the best description of life on a moon that I have read for a long time. I bet there were only a few that didn't

like this one. For *Nova Solis*: at least the humans had a chance for future life, however dreamy. *The Greek Doom* bears suspicious resemblance to *I Am Not God*. That picture of a sea monster in *Human Machines* may have been a sailor once but I was absolutely unable to visualize him in that shape and form.

Avalanche had full retribution for the wronged anyway. I never had a better laugh than that while reading *The Fourth-Dimensional Demonstrator*. This bit of comedy was entirely welcome. Let's have a *Derelict* sequel and a page of scientific facts.—Hudson Frazier Pritchard, P. O. Box 525, Princeton, West Virginia.

We Miss Dold, Too!

Dear Editor:

I think that the announcement of the illness of that acme of illustrators, Elliott Dold, is the worst bit of news that has graced the pages of our "marvel mag" since the coming of *Lo!* This superartist has some intangible quality which he lends to his masterpieces that is nothing short of perfection. I, for one, shall miss him greatly.

The stories in the December issue were good, but not any better than the ones in previous issues. *The Fourth-Dimensional Demonstrator* and *The Mad Moon* were the best. I surely wish Leinster was as prolific as Stanley G. Weinbaum.

I tried to save all the installments of *Blue Magic* until I have them all and could read them in a lump, but the temptation was too powerful. After reading the first two installments, I am rather in doubt as to what I think of them. The best word that I can conjure is "perplexing." Anyway, it looks like a pretty good story, and I will wait for the concluding installment before I draw any conclusions.—Douglas Blakely, 4516 Edina Boulevard, Minneapolis, Minnesota.

Indefinable Something?

Dear Editor:

Somehow the December issue does not seem to satisfy. It lacks that indefinable something that characterized all of the former issues. The cover also displeased. The monster looked like King Kong and the two men looked like fuzzy-cheeked schoolboys who were playing hooky.

However, there were a few stories that did please; these were *The Mad Moon*, *The Fourth-Dimensional Demonstrator*, and *Nova Solis*. *Forbidden Light* did not have enough scientific explanation to suit me, although I don't like too much of it.

The controversy about too much science in the stories is proving interesting reading. My opinion is that you should have a few stories in each issue to satisfy those who are searching for blood and thunder.

Now about the much-wanted quarterly again: It should have one full-length novel which ordinarily ought to be a serial, one novelette and three or four shorts. I am sure that every one who reads the magazine would buy a quarterly. Please let us have a definite answer.—Lyman Martin, 65 Howe St., Marlboro, Massachusetts.

Attack!

Dear Editor:

I am writing to you, the editor of a science-fiction publication. As the name implies, this corner in the bookshelf of literature is intended to be devoted to a presentation of imaginative or actual science combined, of course, with fiction. Every reader of science-fiction must have been amazed upon reading one of the tales in the December issue of *Astounding Stories*. One of the authors seemed to be ignorant of the meaning of this description. I refer to James Montague, author of *Forbidden Light*.

Stories have been written whose plots are based on impossibilities. Stories have been written which contain miscalculations and de-

fluencies of the laws of science. However, the part of Mr. Montague's story which caused me to write this letter was small indeed, but "in small things we are defeated."

I refer to the speech of Gideon at the top of page 124: "The damned lightning starts from the ground, Stanton, and that isn't natural, is it?" In this, he exposes definitely a fact which makes itself evident throughout the story, namely: that he knows very little of science or the subject with which he deals.

Mr. Montague apparently never learned one of the basic laws of electricity—that only negative electric charges move. The fact that whether lightning moves up from the earth or down from the sky cannot be determined because, to the naked eye, lightning appears simultaneous as it would travel 15,500 miles before the eye could register even its existence.

Though the initial error is a minor one, I consider it far greater than the deeply laid mistakes which critics are always digging for, because it openly, brazenly, almost in an emphasized manner, shows Mr. Montague's ignorance. Every high-school boy knows that lightning strikes upward from negative earth to the positive clouds. This exposure is as undisguised as it is irreparable.

The handling of the rest of the plot, as is natural from one ignorant of science, is done very clumsily. None of the scientific points are fully explained probably because Mr. Montague's limited knowledge wouldn't allow a plausible explanation.

The other stories in the magazine are above average. *Blue Magic* is promising; it seems to be a particularly interesting tale.

Human Machines has a very unsatisfactory and indefinite ending.—Robert L. Harder, Jr., 225 East 4th St., Berwick, Pennsylvania.

Another New Idea!

Dear Editor:

I just got the December issue about two hours ago and it's the best issue yet. The only thing I didn't care for was the cover. As for the illustrations: Dold's, Marchioni's, and Howard V. Brown's are very good. Flatos' and Saaty's are almost as good, but the ones that I liked the best were Thompson's for *The Mad Moon*.

I hear that Wesso is coming back; that's swell. Too bad Dold is going to be gone for a year, but if Wesso can take his place for a while, I'll be satisfied. I never expected about twenty pictures for one magazine in one issue.

Some one said that the magazine won't last them for a whole month, but I'll tell you what I did. I got a ten-cent box of water colors, some blotters, and painted the pictures in some of my magazines. The colors have to be blotted right away to keep the pages from wrinkling. Thus you can get about ten hours more enjoyment out of *Astounding* each month, and also brighten up your magazines. How's that for an idea?—Morris Dollens, 126 Twelfth Ave., North St. Paul, Minnesota.

Re: "Fantasy Magazine"

Dear Editor:

It is a well-known fact that science-fiction fans comprise the most enthusiastic group of readers in the entire magazine fiction field. In no other magazines can one find, for instance, such lengthy readers' departments, where one is able to discuss the magazine and its stories or criticize scientific theories, expounding one's own views.

However, the readers' departments are, of necessity, limited in their scope. To take care of this deficiency, science-fiction fan magazines have come into existence. At present there are a great number of them, but the one that is, I believe, generally recognized as the leader in the field is *Fantasy Magazine*. This is a small printed magazine that is sold through subscription only.

Among the features included in its contents for every issue are: a biography or interview with a prominent science-fiction author; a gossip and news column giving outside and advance information concerning authors and stories; a complete and authoritative column concerning science-fiction in the movies; science-fiction news in foreign countries; a service department giving complete information on rare science-fiction, scientific and science-fiction articles by well-known authors and fans; occasional outstanding science-fiction stories and satires.

Readers of Astounding Stories, you will be greatly interested in *Fantasy Magazine*. Why not give it a trial? For further information send your name and address to Julius Schwartz, 255 East 188th St., New York City.

More Adventure, Mystery, Romance!

Dear Editor:

Textbooks on chemistry, physics and astronomy may be obtained from the neighborhood library, so please keep some of the saliences out of our magazine. We readers read Astounding for the adventure, mystery, and romance contained in the stories, and not for a conglomeration of equations and dry scientific fact. So please, give us more adventure and less science.

Well, Mr. Weinbaum, let's have the sequel to *The Red Peri*, whose way you paved so excellently, with the ending of that marvelous story.

I suppose the semimonthly question has been settled by this time so I shall not make further comment other than this: I hope Astounding remains a monthly.

Before I forget, allow me to congratulate you, Mr. John Jessel, on the delightful tale, *The Adaptive Ultimate*. It's truly a swell story, if you will forgive the colloquialism.

I see that you are trying to get Wesso to illustrate for Astounding Stories. I sincerely hope that you will allow him to do at least one cover. Then, and then only, will Astounding Stories have a chance to reach the peak that the old Astounding Stories set.

Of all the childish nonsense! So Charles Burhans of Lakewood, Ohio, wants to carve little models of rocket ships, does he? Well, Charlie, conduct your carving elsewhere. Astounding Stories is a science-fiction magazine and not a publication for people who have nothing else to do but carve rocket ships. Plans of this sort may be found in other magazines, so please, Mr. Editor, don't desecrate Astounding Stories with such childish nonsense as this.

Now that I think of it, I have another point to bring out. What was so great or extraordinary about *The Mightiest Machine*—and several other of those so-called masterpieces? Also what is so wonderful about Brown's cover illustrations? Why don't you try Wesso?—Phil McKernan, 827 Greenwood Ave., San Mateo, California.

No Complaints!

Dear Editor:

Here is a letter from an old reader of Astounding Stories. In fact, I bought the first issue of the first science-fiction magazine on a news stand. But this is my first letter to any magazine of the type.

This is the reason: I saw a letter in Brass Tacks of the December issue from Robert Pratt of Cedarhurst, New York, asking that you start a science-fiction magazine with only one or two main characters. This type of magazine would give the author a chance to describe all the fine points in his story. It would not mean that one author would write every issue along as it was put together.

I have wished for a magazine of this type ever since I bought my first and that must have been eight or nine years ago. I still like them.

I haven't anything to complain about. I've found that if I don't like a certain story I am sure to like it the next time I pick up the magazine. So keep up the good work and try to figure out a way to make up that new magazine.—Lester L. A. Neland, 1846 North Park Ave., Chicago, Illinois.

A New Reader Tells Why!

Dear Editor:

I am a very new reader and perhaps slightly younger than most of your readers, since I am only eleven. I have enjoyed only two issues of Astounding Stories—November and December. My mother gave me money this morning to buy the January issue if it has come.

My father is a newspaperman and I have been living in Berlin, Germany. We just came home in October and I have been in seven countries in the last two years: Canada, England, Holland, Germany, France, Ireland, and America. In none of these countries have I found so much enjoyment as I do in Astounding Stories.

And now to do the mission of the letter: on the Editor's Page in the December issue you asked more readers to write on the subject of the balance of science and adventure in the stories.

In the December issue: *Davey Jones' Ambassador*—exactly right; *Nova Solis*—a fine story but a little too little adventure. *The Mad Moon*—I repeat, exactly right. *Human Machines*—enough adventure but too little science. *The Fourth Dimensional Demonstrator*—neither enough science nor enough adventure—too much love. *Avaleanche*—an excellent story, just right.

Best of luck!—Robert Gibson Thompson, 404 West 7th St., Owensboro, Kentucky.

They Want Humor!

Dear Editor:

We, the cosigners of this letter, have organized as a committee of five to protect our interests against the insidious influence of the three of Cleveland. The suggestions and criticisms made by these three in the January Astounding are at decided variance to our wishes. Realizing the potency of their methods, we have decided to fight the devil with his own fire. Therefore, we have cooperated to write this reciprocal letter, signed by five instead of three and designed to checkmate the influence of the three.

In regard to the illustrations, we wish to remain neutral, in so much as we do not favor one artist any more than any other. In our collective opinion, the matter is relatively unimportant anyway.

We are unanimously in favor of humor and plenty of it. We do not like stories as the *Skylark* stories and *The Blue Infinity*. Top-most among our favorites are *Old Faithful*, *Islands of the Sun*, *Twelve Eighty-Seven*, and *Redmask of the Outlands*. We hope and believe that Astounding will continue to give us stories of similar quality. *The Mad Moon*, *Smothered Seas*, and *Laboratory Coöperators* are recent examples of good science-fiction. Last but not at all least, we are not ready to pay a nickel more to get smooth edges. The three of Cleveland are idiots to suggest such a thing. We would not mind paying five cents more for more pages in higher quality stories—we believe the latter order would be hard to fill—but we are not concerned about the edges. It's all the same to me if Astounding is printed on scrolls.

In closing, we wish to state that while there has been some slight dissension on a few points, on the whole the foregoing represents with full accuracy the opinions and desires of five of your devoted readers.—Lar G. Planet, H. V. Sparks, Doctor Vuc M. Troob, N. G. A. S. Towanda, O. M. Davidson, Jr., Box 24, Ged. Louisiana.

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IF YOU ARE WEAK, PALE, RUNDOWN AND SKINNY ...MAKE THIS SIMPLE TEST!

It's GLANDS STARVING for IODINE That Keep You Tired, Nervous and Worn-out

Natural Iodine in Kelpamalt, New Mineral Concentrate, Must Correct Trouble With Tired, Careworn, Haggard-Looking Folks the First Week and Add 5 Lbs. of Solid, "Stay There" Flesh or the Trial Is FREE!

As the result of tests covering thousands of weakened, run-down, nervous, skinny folks, science now claims that it is **GLANDS STARVING FOR IODINE** that keep you pale, tired-out, underweight and ailing. When these glands don't work properly, all the food in the world can't help you. It just isn't turned into "stay-there" flesh, new strength and energy.

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It contains 1300 times more iodine than oysters, once considered the best source. 6 tablets alone contain more **NATURAL IODINE** than 486 lbs. of spinach or 1387 lbs. of lettuce.

Make this test with Kelpamalt. First weigh yourself and see how long you can work or how far you can walk without tiring. Then take 3 Kelpamalt Tablets with each meal for 2 weeks and again weigh yourself and notice how much longer you can work without tiring, how much farther you can walk. Notice how much better you feel, sleep and eat. Watch flattering extra lbs. appear in place of scrawny hollows. And if you don't gain 5 lbs. the very first week the trial is free.



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100 jumbo size Kelpamalt tablets—four to five times the size of ordinary tablets—cost but a few cents a day to use. Get Kelpamalt today. Kelpamalt costs but little at all good drug stores. If your dealer has not yet received his supply, send \$1.00 for special introductory size bottle of 65 tablets to the address at the right.

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"GET A LIFT WITH A CAMEL"



"I AM A STEEL WORKER on the Triborough Bridge," says Ben Parsons (*above*). "When tired, I get a 'lift' with a Camel."

TUNE IN! Camel Caravan with Walter O'Keefe, Deane Janis, Ted Husung, Glen Gray and the Casa Loma Orchestra. Tuesday and Thursday—9 p.m. E. S. T., 8 p.m. C. S. T., 9:30 p.m. M. S. T., 8:30 p.m. P. S. T.—over WABC-Columbia Network.

THE TOWERS OF MANHATTAN from a new angle—New York's new Triborough Bridge. In the foreground: Howard Hougland, wearing the picturesque engineers' "hard hat." "An engineer's life is packed with action," he says. "When my pop is at low ebb, there is nothing like a Camel. I always get a 'lift' with a Camel. I also prefer Camel's good taste."



WINTER SPORTS TAKE ENERGY TOO. Says Margaret Lynam (*left*): "When I feel exhausted from a long day outdoors, Camels renew my flow of energy."

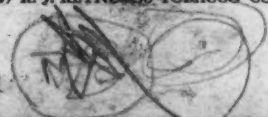
COSTLIER TOBACCOS!



● Camels are made from finer, MORE EXPENSIVE TOBACCOS—Turkish and Domestic—than any other popular brand.

(Signed) R. J. REYNOLDS TOBACCO CO., Winston-Salem, N. C.

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